



November 30, 2017

Mr. Allan Batka
United States Environmental Protection Agency
Region 5 (WU-16J)
77 West Jackson Blvd.
Chicago, Illinois 60604

Re: EGT Monthly Report (in conformance with MI-163-1W-C010 & MI-163-1W-C011)

Dear Mr. Batka:

Environmental Geo-Technologies, LLC ("EGT") hereby timely submits its forty-eighth Monthly Report ("MR") in conformance with the requirements of its two EPA UIC permits (#s MI-163-1W-C010 & MI-163-1W-C011).

EGT is providing all of the attached information in the same sequence as required by both subject permits, i.e. Part II.D.1 (a-i), Part III, Attachment A, and Part III, Attachment E.G.2 & E.I. Our computer system has had its corrective action performed and thus the two 'missing' pages from the September, 2017 EGT MR are appended to this report.

EGT did not accept any F039 waste in October 2017 so no Page A-3 of 3 laboratory analyses are necessary to be submitted as part of this MR.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

We trust that you find this interim report satisfactory, however, if you have any questions or comments, please feel free to contact us.

Sincerely,

Richard J. Powals, P.E.
Vice-President

cc: J. Frost (EGT), T. Athans (EGT), P. Sullivan (EGT)

att.

rjp113017/EGTEPAMonthlyReport-October, 2017

AVERAGE INJECTION RATE

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2017

CURRENT REPORTING MONTH OCTOBER

Date (month, year) of the first injection into either well at the Citrin Road Facility

NOV 2013

CURRENT MONTH (all volumes in gallons)

	Injected Waste	Injected Non-Waste	Total injected
MI-163-1W-C010, Well #1-12			
Current Month	333,870	0	333,870
Since facility first injected			12,959,579
MI-163-1W-C011, Well #2-12			
Current Month	0	0	0
Since facility first injected			4,648,736
		Lifetime Combined	17,608,315

Conversion factors

365.25 days per year ÷ 12 months per year = 30.4375 days per month

30.4375 days per month × 1440 minutes per day = 43,830 minutes per month

Calculations

Whole number of months of injection 47

$$\begin{aligned} & \text{_____ lifetime number of months of injection} \times 43,830 \text{ minutes/month} \\ & \qquad \qquad \qquad = \underline{2,060,010} \text{ minutes of injection} \end{aligned}$$

$$\begin{aligned} \text{Lifetime combined injected volume } & \underline{17,608,315} \div \underline{2,060,010} \text{ minutes of injection} \\ & = \underline{8.5} \text{ gpm average injection rate} \end{aligned}$$

WELL 01 Monthly Data

Date	Min Injection Pressure (PSIG)	Max Injection Pressure (PSIG)	Min Sight Glass Level (in)	Max Sight Glass Level (in)	Min Annulus Pressure (PSIG)	Max Annulus Pressure (PSIG)	Min Injectate pH	Max Injectate pH	Min Flow Rate (GPM)	Max Flow Rate (GPM)	Min Differential Pressure (PSIG)	Max Differential Pressure (PSIG)
10/1/2017	95.9	754.6	18.6	19.0	741.7	1132.3	6.9	6.9	2.7	21.8	312.9	659.3
10/2/2017	365.1	752.1	18.6	19.0	954.5	1166.7	6.9	6.9	14.9	16.9	334.2	589.5
10/3/2017	124.0	756.8	18.7	19.0	775.4	1088.7	2.3	6.9	16.0	28.8	290.9	652.0
10/4/2017	35.9	754.7	18.8	19.0	768.8	1293.2	0.7	2.3	20.8	35.8	342.9	734.8
10/5/2017	35.3	752.0	18.6	19.1	862.6	1280.2	2.3	7.3	12.7	16.1	500.6	849.3
10/6/2017	104.0	755.3	18.6	19.0	752.0	1227.6	7.2	7.2	8.2	77.7	383.5	785.5
10/7/2017	3.9	8.0	18.6	19.0	740.1	752.0	7.2	7.2	0.0	0.0	732.7	749.2
10/8/2017	-0.2	4.4	18.7	19.0	739.3	745.6	7.2	7.2	0.0	0.0	735.0	745.7
10/9/2017	-3.8	9.0	18.7	19.0	732.1	739.4	7.2	7.2	0.2	14.3	729.1	738.5
10/10/2017	-4.8	8.6	18.6	19.0	730.8	739.2	7.2	7.2	0.7	12.3	730.5	738.6
10/11/2017	-2.1	26.9	18.5	18.9	702.4	757.8	7.2	7.2	0.2	11.7	694.4	758.6
10/12/2017	-1.2	697.0	18.5	18.8	683.5	1010.9	0.6	0.6	5.1	29.2	312.6	724.1
10/13/2017	75.9	754.7	18.5	19.0	710.4	1030.1	0.6	1.4	16.3	30.5	270.7	657.1
10/14/2017	73.6	75.9	18.7	19.0	703.3	710.5	1.4	1.4	0.0	0.0	629.6	634.6
10/15/2017	72.8	73.7	18.7	18.9	699.5	703.4	1.4	1.4	0.0	0.0	626.6	632.0
10/16/2017	72.6	754.0	18.5	18.9	697.6	1007.1	2.9	2.9	13.2	29.4	236.1	626.7
10/17/2017	200.5	755.0	18.5	18.9	745.5	1025.4	1.2	3.0	18.1	21.6	238.7	546.9
10/18/2017	-1.5	754.3	18.1	19.0	671.0	1058.1	2.2	2.2	15.6	132.8	259.1	705.8
10/19/2017	-3.6	2.9	18.4	18.9	662.2	671.1	2.2	2.2	0.0	143.1	663.5	672.0
10/20/2017	-2.3	716.1	18.4	18.9	659.6	951.7	2.2	2.2	2.5	144.4	231.6	665.1
10/21/2017	126.7	129.3	18.5	18.9	700.6	701.7	2.2	2.2	0.0	0.0	571.4	574.4
10/22/2017	125.3	126.8	18.5	18.9	698.5	701.1	2.2	2.2	0.0	0.0	573.2	574.5
10/23/2017	124.8	754.4	18.6	18.9	699.1	1012.7	2.2	6.7	16.4	30.5	251.7	588.3
10/24/2017	86.6	756.0	18.5	18.9	693.8	1003.1	6.6	6.7	12.8	25.9	227.3	609.7
10/25/2017	81.1	756.7	18.4	18.7	673.8	1011.9	1.3	6.6	10.0	27.2	207.9	610.7
10/26/2017	47.9	757.5	18.4	18.7	679.4	1032.8	1.7	1.7	15.9	33.0	236.2	632.0
10/27/2017	-10.0	758.0	18.4	18.7	660.2	1042.0	1.3	1.4	6.8	97.8	250.0	683.9
10/28/2017	-10.0	630.0	18.4	18.7	647.5	971.8	1.1	1.4	0.0	0.0	341.8	677.6
10/29/2017	-5.9	-3.4	18.4	18.4	644.4	647.6	1.4	1.4	0.0	0.0	647.8	653.4
10/30/2017	-7.5	751.8	18.4	18.7	643.5	1025.7	1.1	1.2	15.9	191.5	267.7	719.0
10/31/2017	1.7	703.4	18.4	18.7	644.8	953.0	1.3	1.3	6.7	27.7	244.0	655.1

Circle Chart Index

Environmental Geo-Technologies, LLC 28470 Citrin Drive Romulus, MI 48174

Chart Recorder #1

Channel #1

Blue Pen - Well 1 Injection Pressure (chart value x 30)

Channel #2

Red Pen - Well 1 Annulus Pressure (chart value x 30)

Channel #3

Green Pen - Well 1 Flow Rate (chart value x 4)

Channel #4

Black Pen - Well 1 Annulus Tank Level (chart value x 0)

Chart Recorder #2

Channel #1

Blue Pen - Well 2 Injection Pressure (chart value x 30)

Channel #2

Red Pen - Well 2 Annulus Pressure (chart value x 30)

Channel #3

Green Pen - Well 2 Flow Rate (chart value x 4)

Channel #4

Black Pen - Well 2 Annulus Tank Level (chart value x 0)

Chart Recorder #3

Channel #1

Blue Pen - Injection pH Well 1 & 2 (chart value ÷ 3.3)

Channel #2

Red Pen - Well 1 Monthly Volume (chart value x 100,000)

Channel #3

Green Pen - Well 2 Monthly Volume (chart value x 100,000)

Channel #4

Black Pen - Temperature (chart value x 0)

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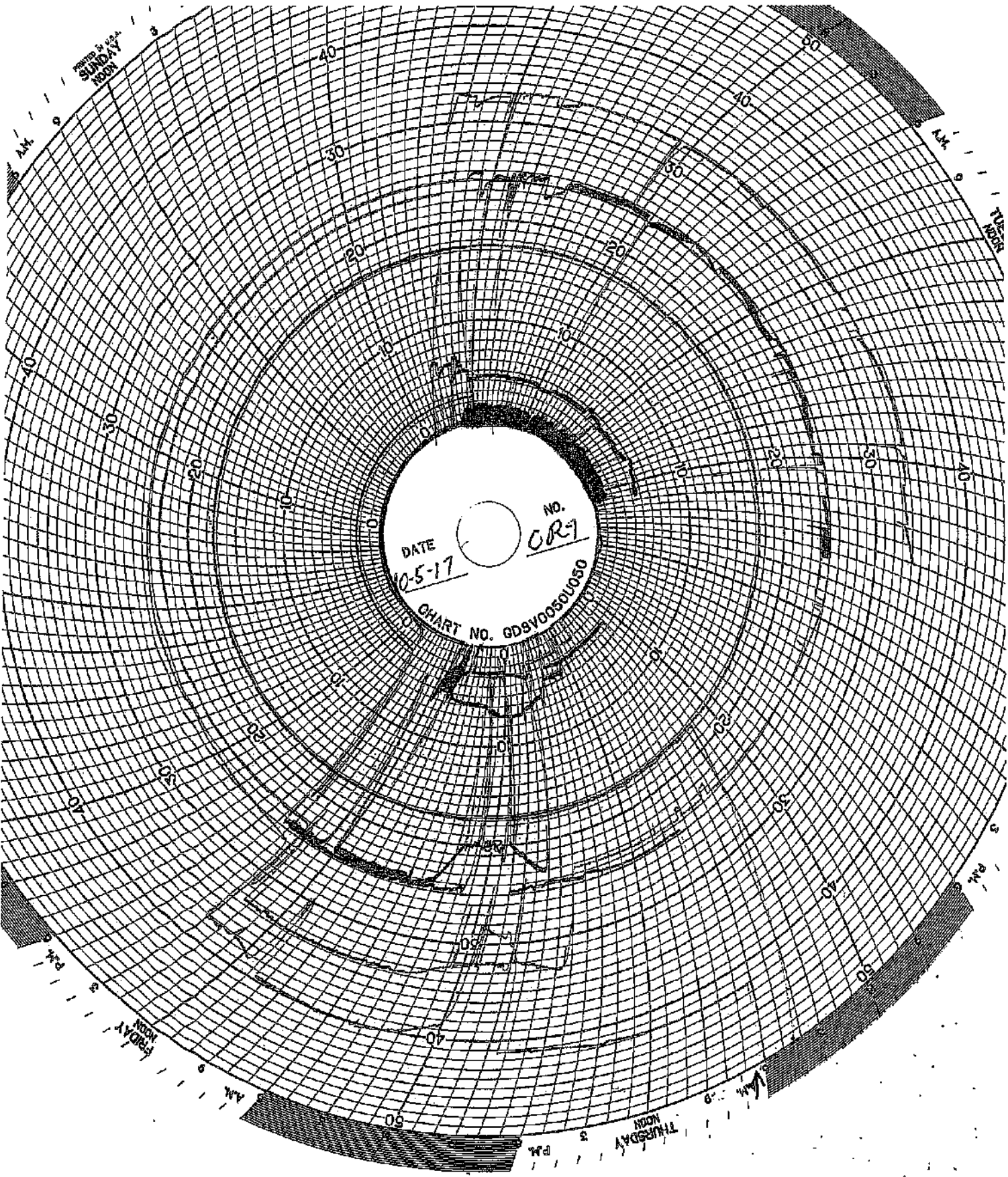
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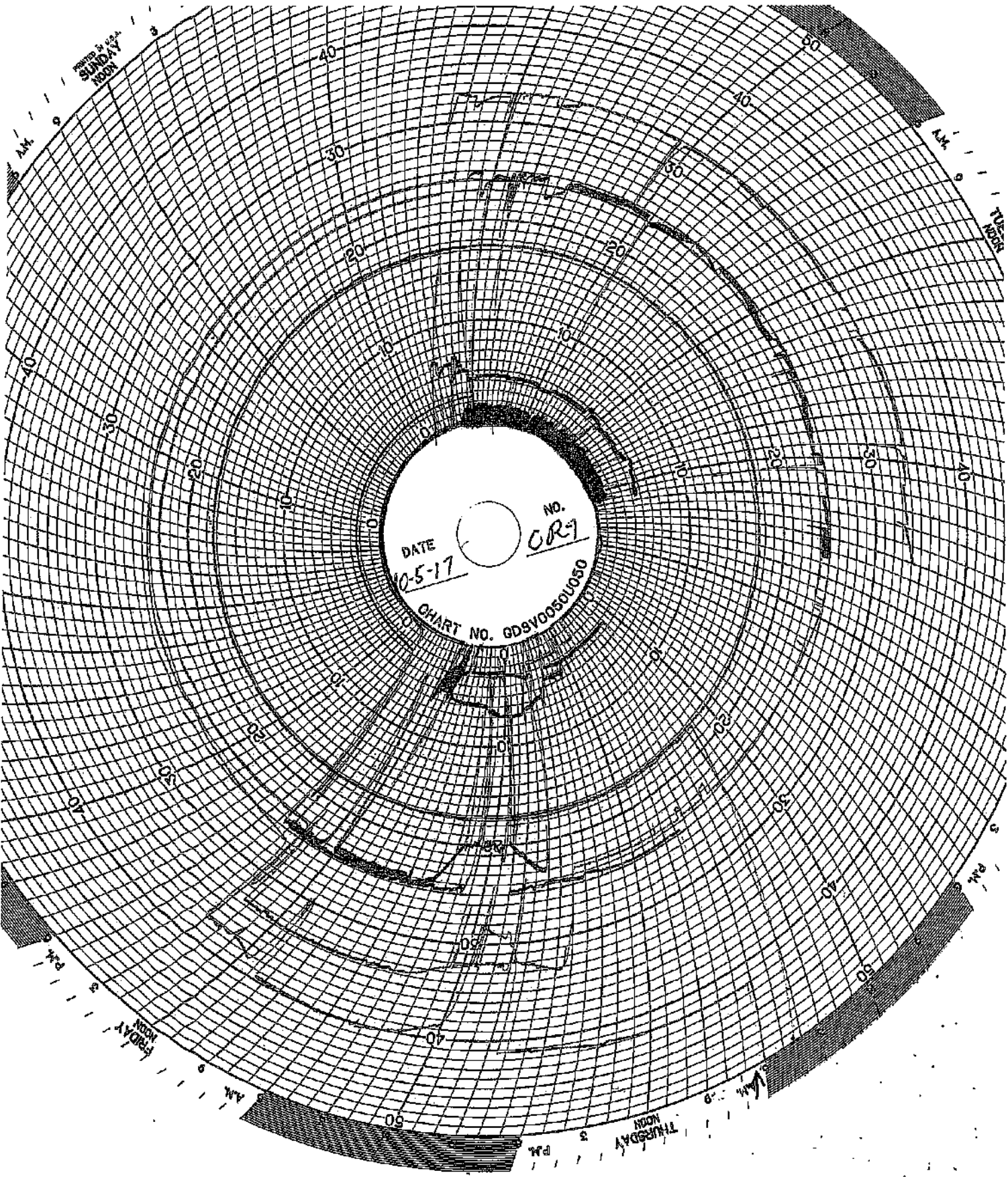
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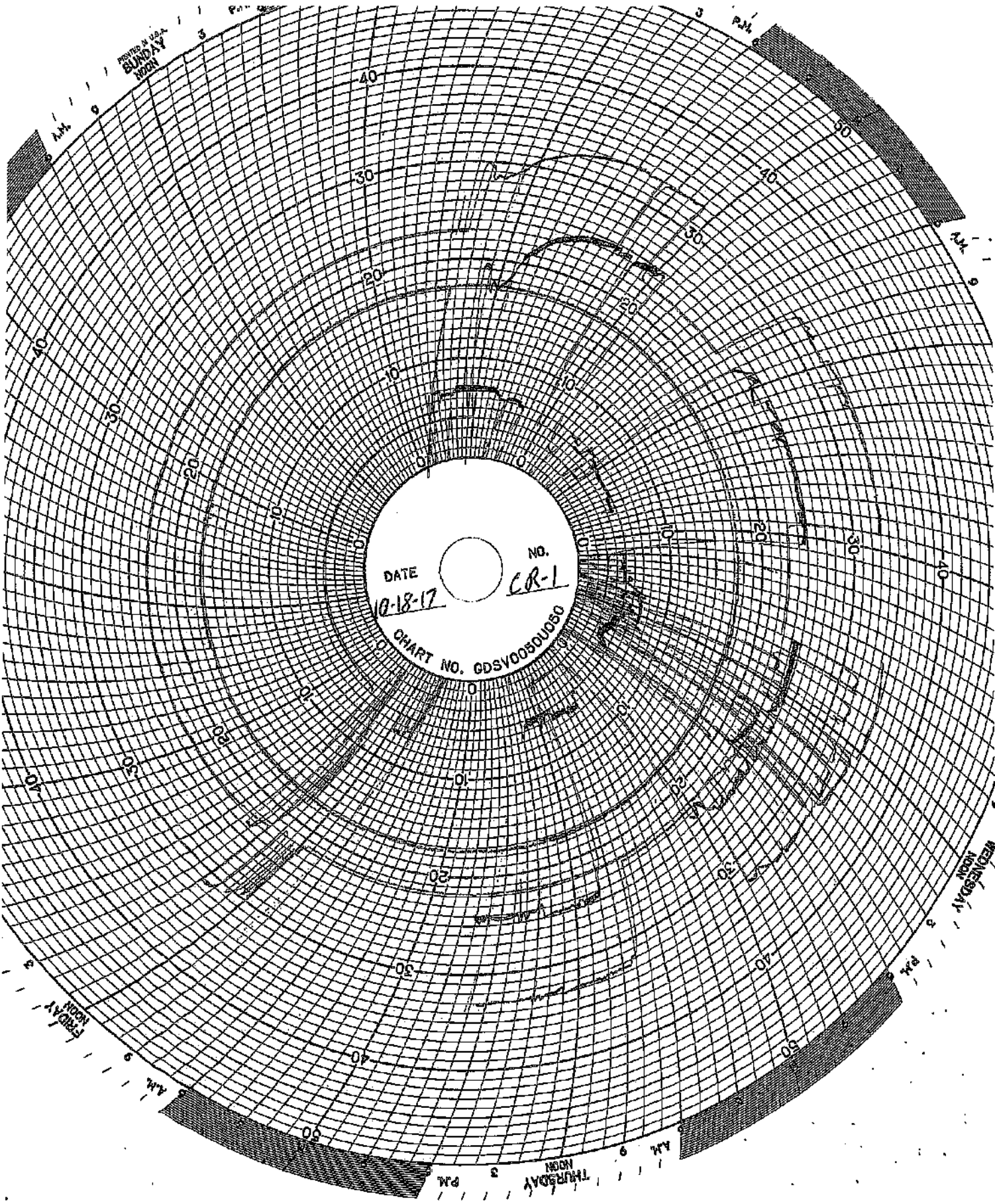


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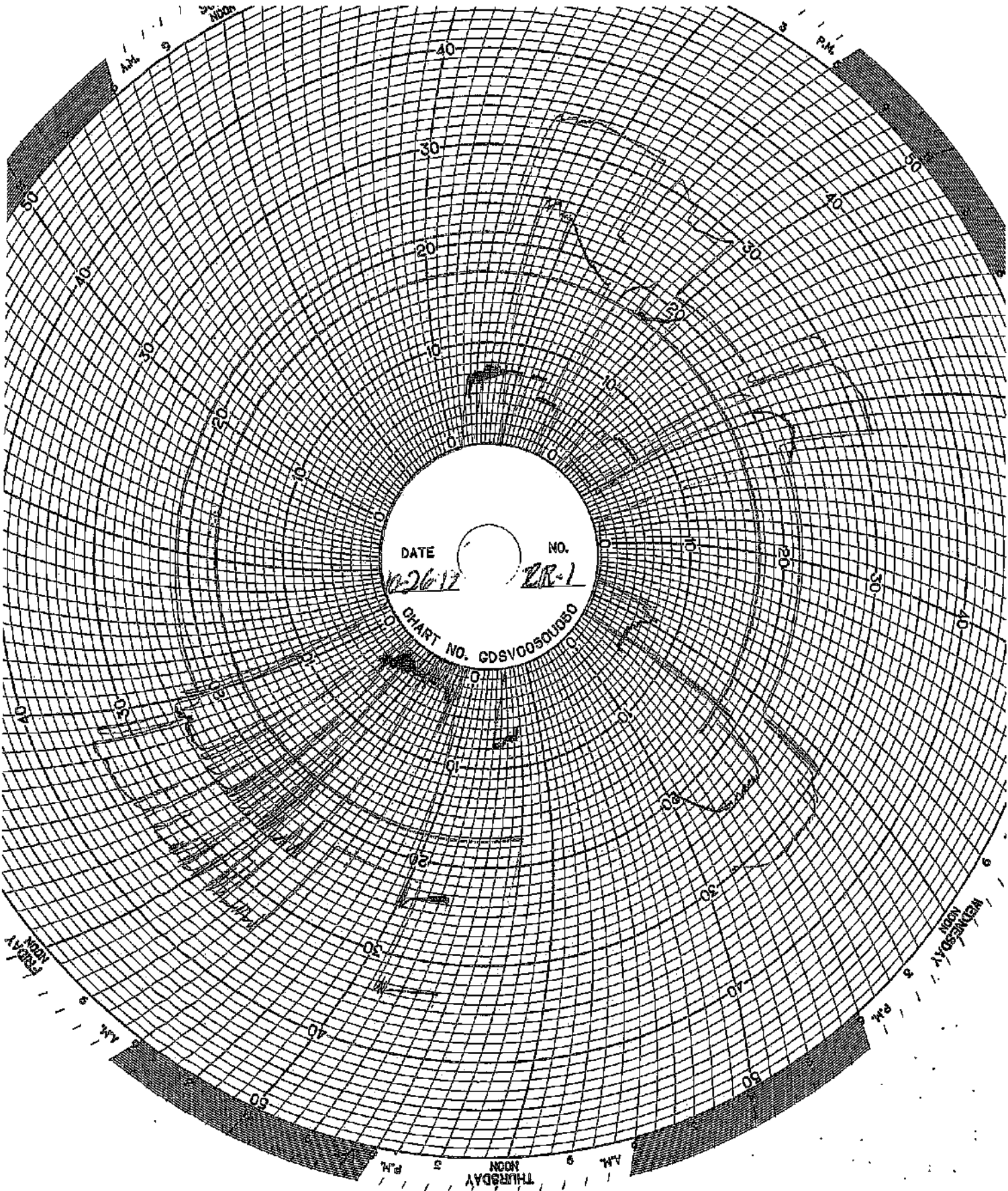
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DATE 11-26-17 NO. ZR-1

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WELL 2 DATA

Well 02 Monthly Data

Date	Min Injection Pressure (PSIG)	Max Injection Pressure (PSIG)	Min Sight Glass Level (in)	Max Sight Glass Level (in)	Min Annulus Pressure (PSIG)	Max Annulus Pressure (PSIG)	Min Injectate pH	Max Injectate pH	Min Flow Rate (GPM)	Max Flow Rate (GPM)	Min Differential Pressure (PSIG)	Max Differential Pressure (PSIG)
10/1/2017	0.0	0.0	17.8	18.5	234.8	236.4	6.9	6.9	0.0	0.0	234.8	236.4
10/2/2017	0.0	0.0	18.1	18.6	234.2	235.8	6.9	6.9	0.0	0.0	234.2	235.8
10/3/2017	0.0	0.0	17.8	18.6	234.5	236.2	2.3	6.9	0.0	0.0	234.5	236.2
10/4/2017	0.0	0.0	18.2	18.4	235.4	236.7	0.7	2.3	0.0	0.0	235.4	236.7
10/5/2017	0.0	0.0	17.9	18.6	235.2	236.5	2.3	7.3	0.0	0.0	235.2	236.5
10/6/2017	0.0	0.0	17.8	18.6	234.6	236.1	7.2	7.2	0.0	0.0	234.3	236.1
10/7/2017	0.0	0.0	18.2	18.3	233.8	235.4	7.2	7.2	0.0	0.0	233.8	235.4
10/8/2017	0.0	0.0	18.1	18.3	232.2	235.1	7.2	7.2	0.0	0.0	232.2	235.1
10/9/2017	0.0	0.0	18.1	18.3	231.7	233.9	7.2	7.2	0.0	0.0	231.7	233.9
10/10/2017	0.0	0.0	17.7	18.6	230.2	232.4	7.2	7.2	0.0	0.0	230.2	232.4
10/11/2017	0.0	0.0	18.0	18.1	228.8	231.3	7.2	7.2	0.0	0.0	228.8	231.3
10/12/2017	0.0	0.0	18.0	18.1	228.5	229.5	0.6	0.6	0.0	0.0	228.5	229.5
10/13/2017	0.0	0.0	17.7	18.5	228.8	231.6	0.6	1.4	0.0	0.0	228.8	231.6
10/14/2017	0.0	0.0	18.1	18.2	229.7	230.9	1.4	1.4	0.0	0.0	229.7	230.7
10/15/2017	0.0	0.0	17.8	18.2	228.5	230.8	1.4	1.4	0.0	0.0	228.5	230.8
10/16/2017	0.0	0.0	17.7	18.5	227.6	230.3	2.9	2.9	0.0	0.0	227.6	230.3
10/17/2017	0.0	0.0	18.0	18.6	227.6	230.5	1.2	3.0	0.0	0.0	227.6	230.5
10/18/2017	0.0	0.0	17.7	18.6	228.5	231.0	2.2	2.2	0.0	0.0	228.5	231.0
10/19/2017	0.0	0.0	17.7	18.4	228.9	231.3	2.2	2.2	0.0	0.0	228.9	231.3
10/20/2017	0.0	0.0	17.6	18.4	227.9	230.3	2.2	2.2	0.0	0.0	227.9	230.3
10/21/2017	0.0	0.0	17.7	18.5	227.7	229.5	2.2	2.2	0.0	0.0	227.7	229.5
10/22/2017	0.0	0.0	18.0	18.5	227.2	229.4	2.2	2.2	0.0	0.0	227.2	229.4
10/23/2017	0.0	0.0	17.8	18.5	226.7	228.5	2.2	6.7	0.0	0.0	226.7	228.5
10/24/2017	0.0	0.0	17.7	18.3	225.7	228.3	6.6	6.7	0.0	0.0	225.7	228.3
10/25/2017	0.0	0.0	17.9	18.0	225.4	226.9	1.3	6.6	0.0	0.0	225.4	226.9
10/26/2017	0.0	0.0	17.9	18.1	225.0	227.6	1.7	1.7	0.0	0.0	225.0	227.6
10/27/2017	0.0	0.0	17.9	18.1	225.4	227.4	1.3	1.4	0.0	0.0	225.4	227.4
10/28/2017	0.0	0.0	17.9	18.0	224.4	226.9	1.1	1.4	0.0	0.0	224.4	226.9
10/29/2017	0.0	0.0	17.9	18.0	224.0	225.4	1.4	1.4	0.0	0.0	224.0	225.4
10/30/2017	0.0	0.0	17.9	18.0	223.2	224.7	1.1	1.2	0.0	0.0	223.2	224.7
10/31/2017	0.0	0.0	17.9	18.0	223.4	224.4	1.3	1.3	0.0	0.0	223.4	224.4

Circle Chart Index

Environmental Geo-Technologies, LLC 28470 Citrin Drive Romulus, MI 48174

Chart Recorder #1

Channel #1

Blue Pen - Well 1 Injection Pressure (chart value x 30)

Channel #2

Red Pen - Well 1 Annulus Pressure (chart value x 30)

Channel #3

Green Pen - Well 1 Flow Rate (chart value x 4)

Channel #4

Black Pen - Well 1 Annulus Tank Level (chart value x 0)

Chart Recorder #2

Channel #1

Blue Pen - Well 2 Injection Pressure (chart value x 30)

Channel #2

Red Pen - Well 2 Annulus Pressure (chart value x 30)

Channel #3

Green Pen - Well 2 Flow Rate (chart value x 4)

Channel #4

Black Pen - Well 2 Annulus Tank Level (chart value x 0)

Chart Recorder #3

Channel #1

Blue Pen - Injection pH Well 1 & 2 (chart value + 3.3)

Channel #2

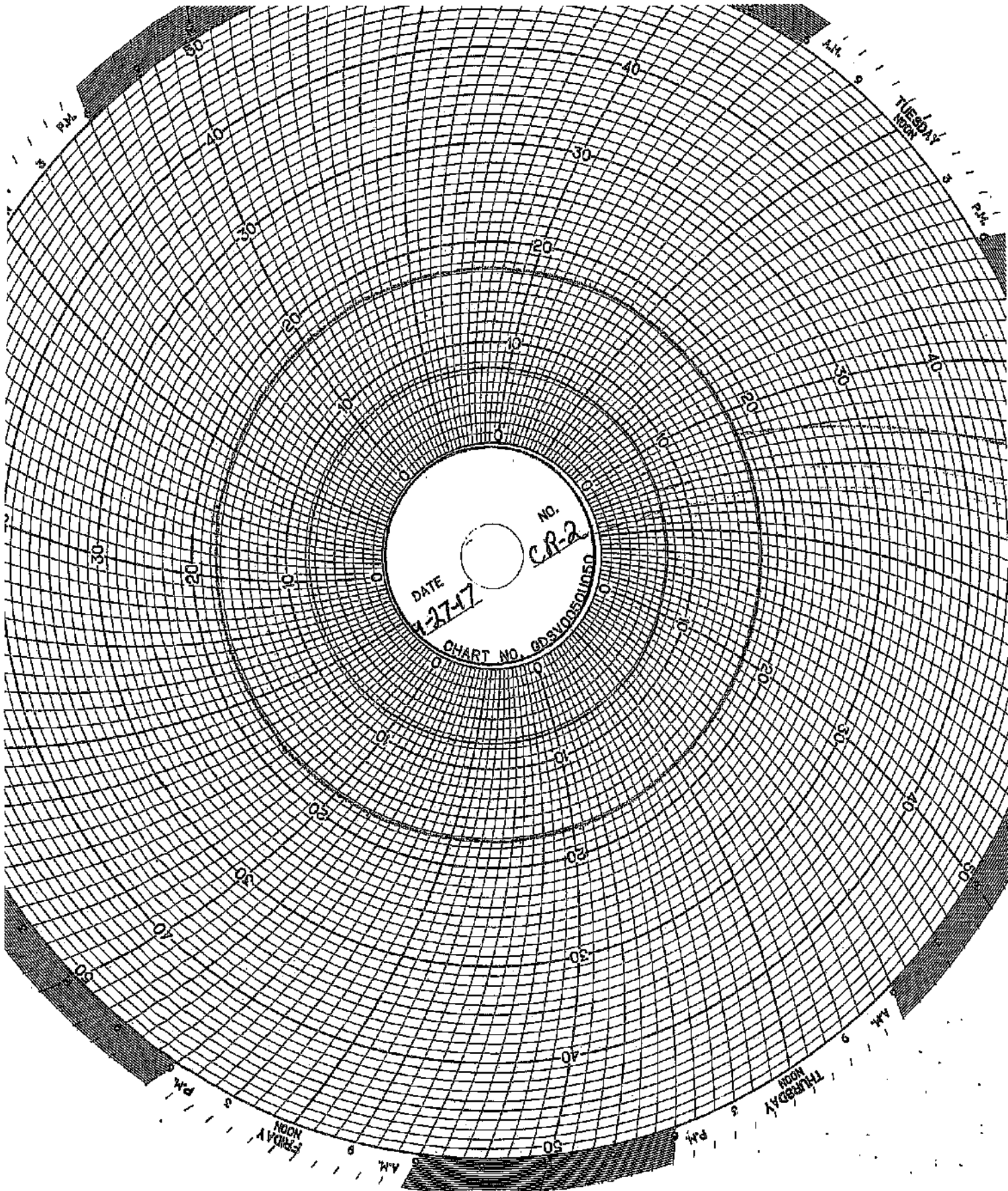
Red Pen - Well 1 Monthly Volume (chart value x 100,000)

Channel #3

Green Pen - Well 2 Monthly Volume (chart value x 100,000)

Channel #4

Black Pen - Temperature (chart value x 0)



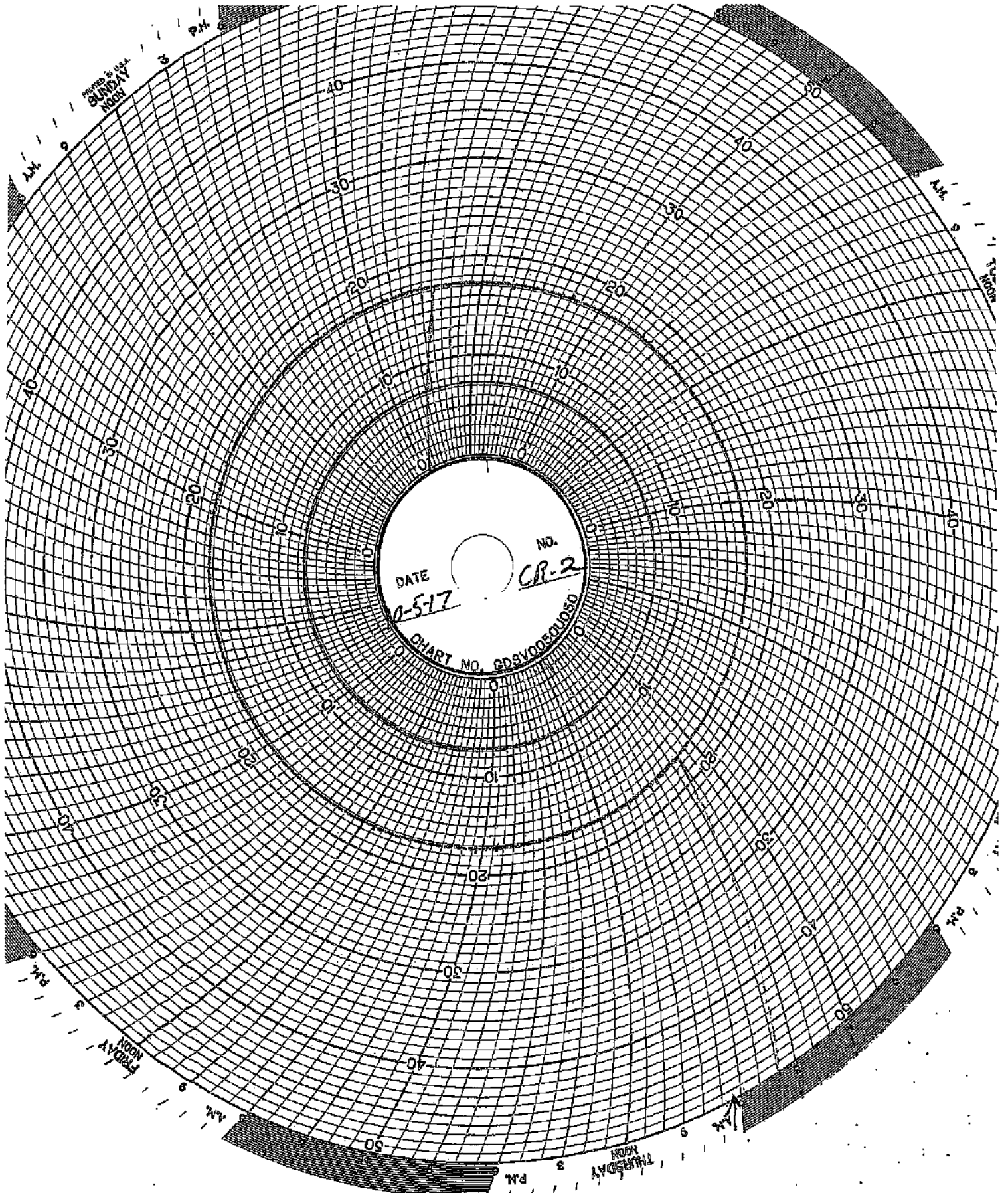
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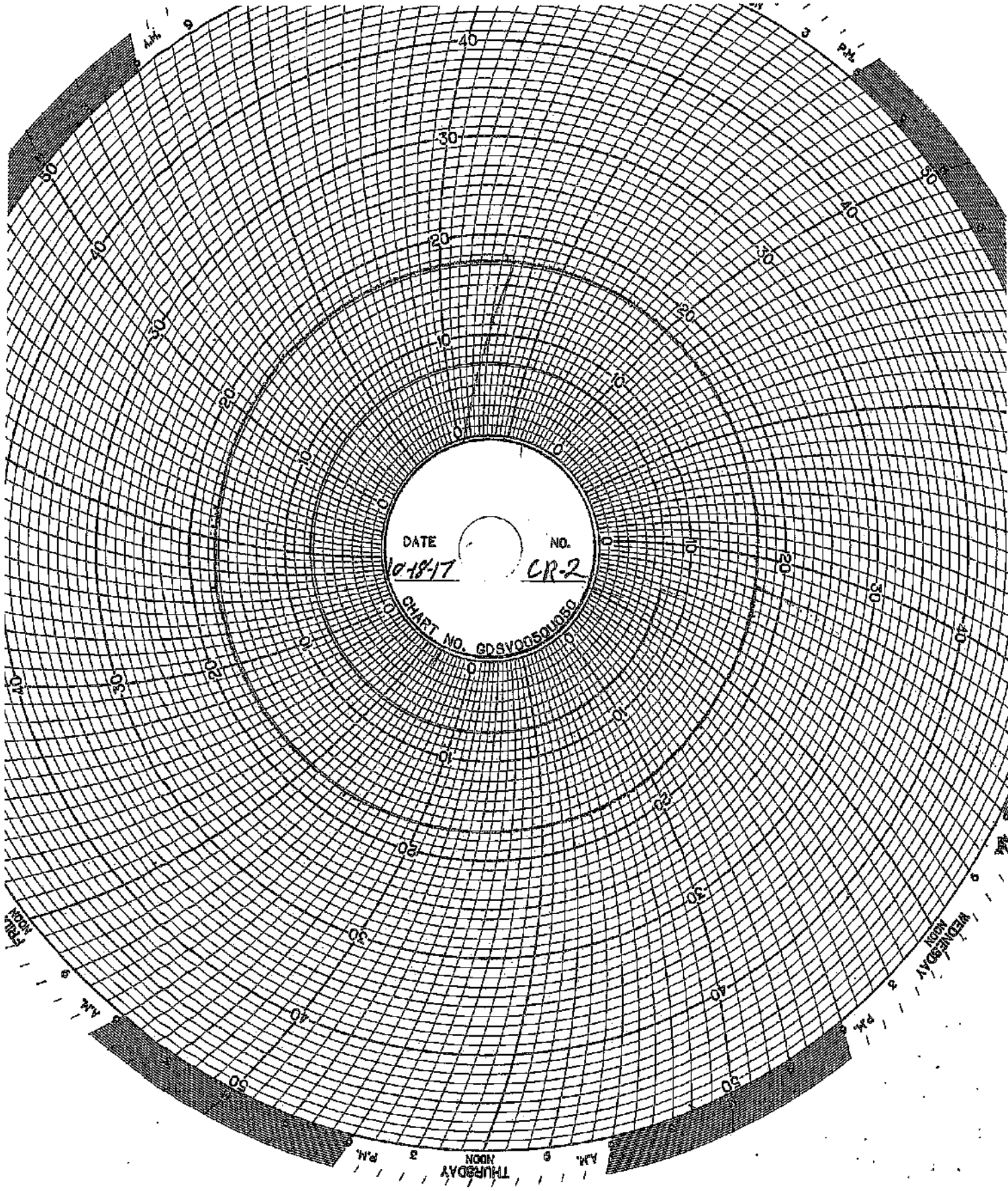
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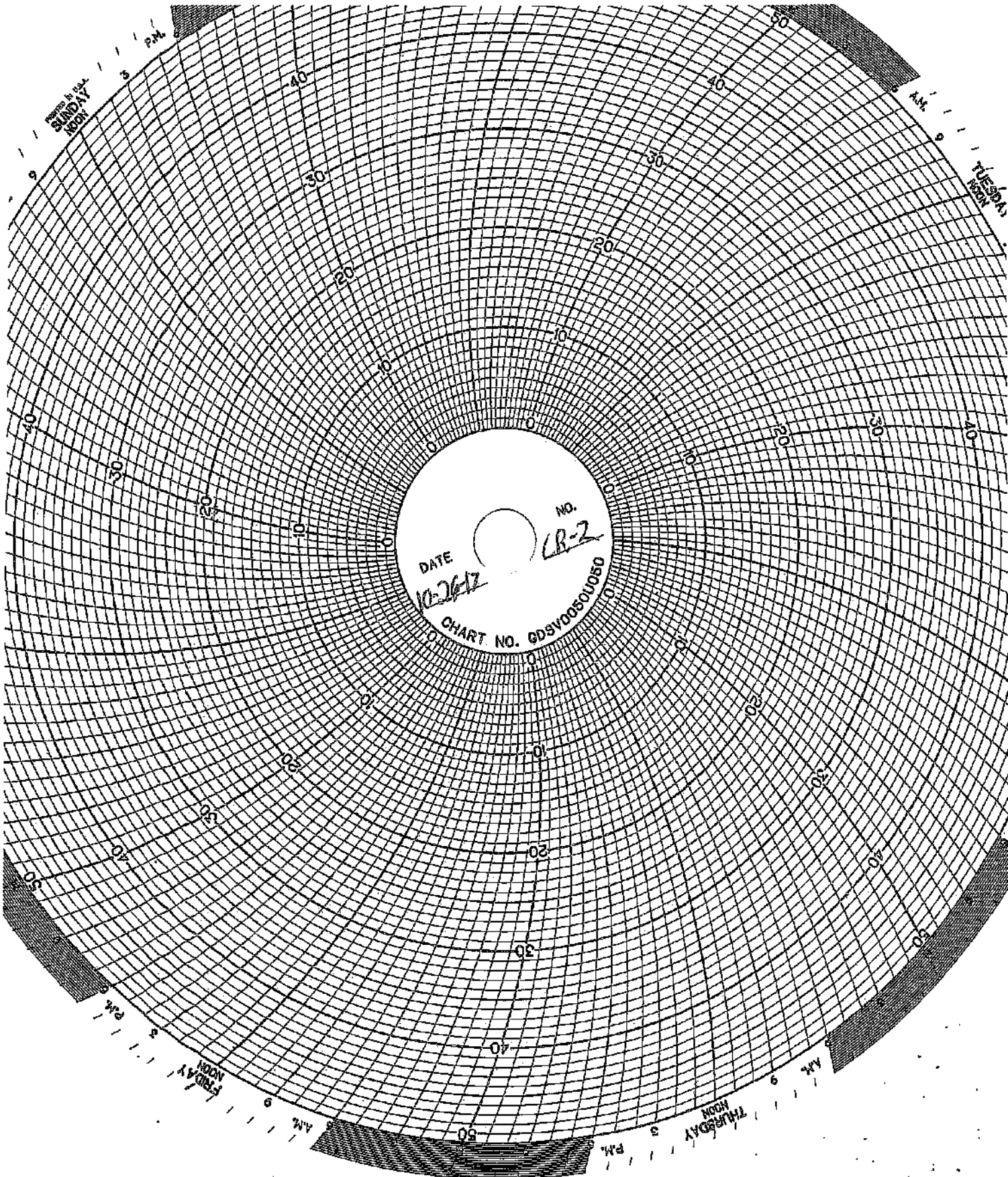


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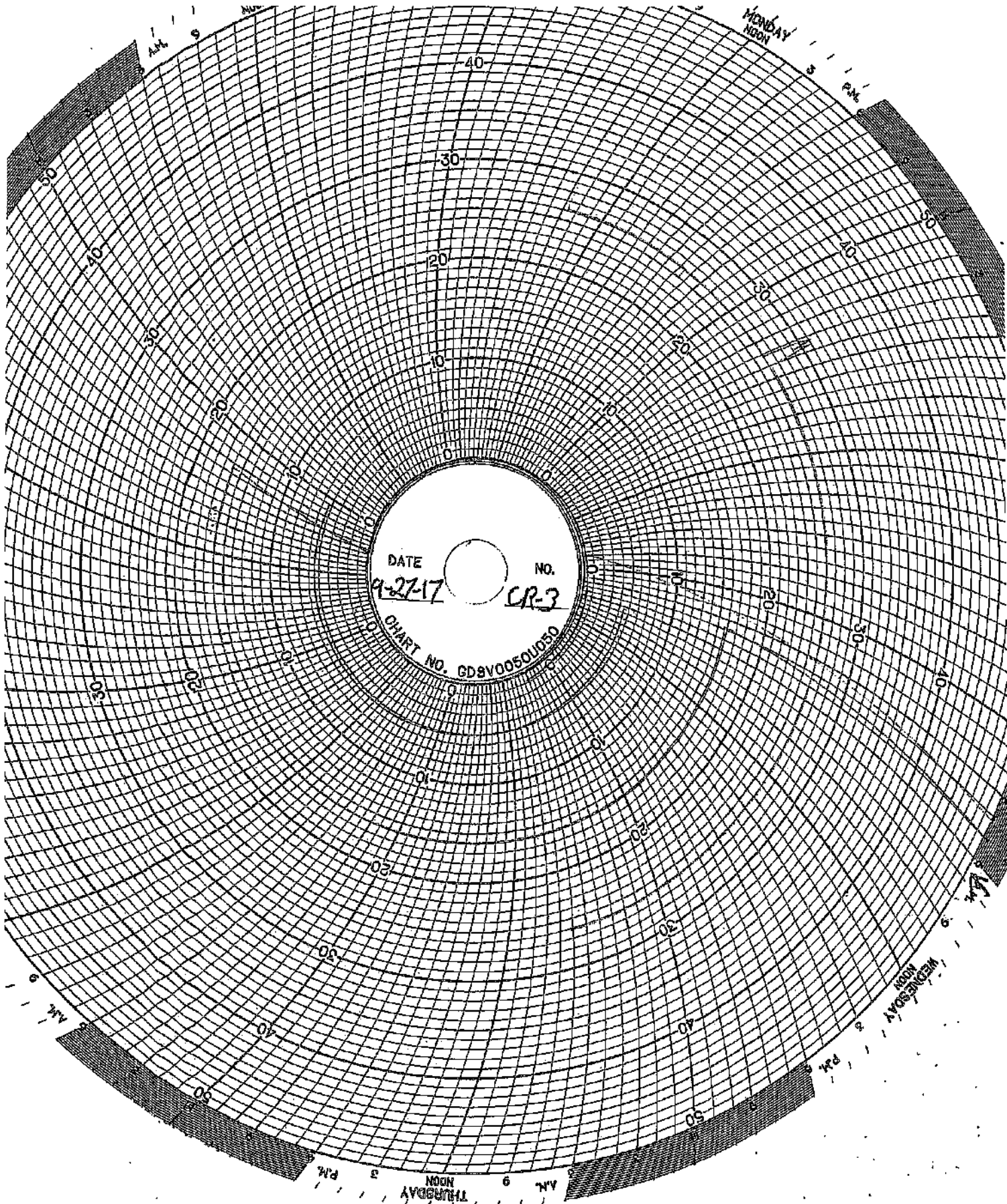
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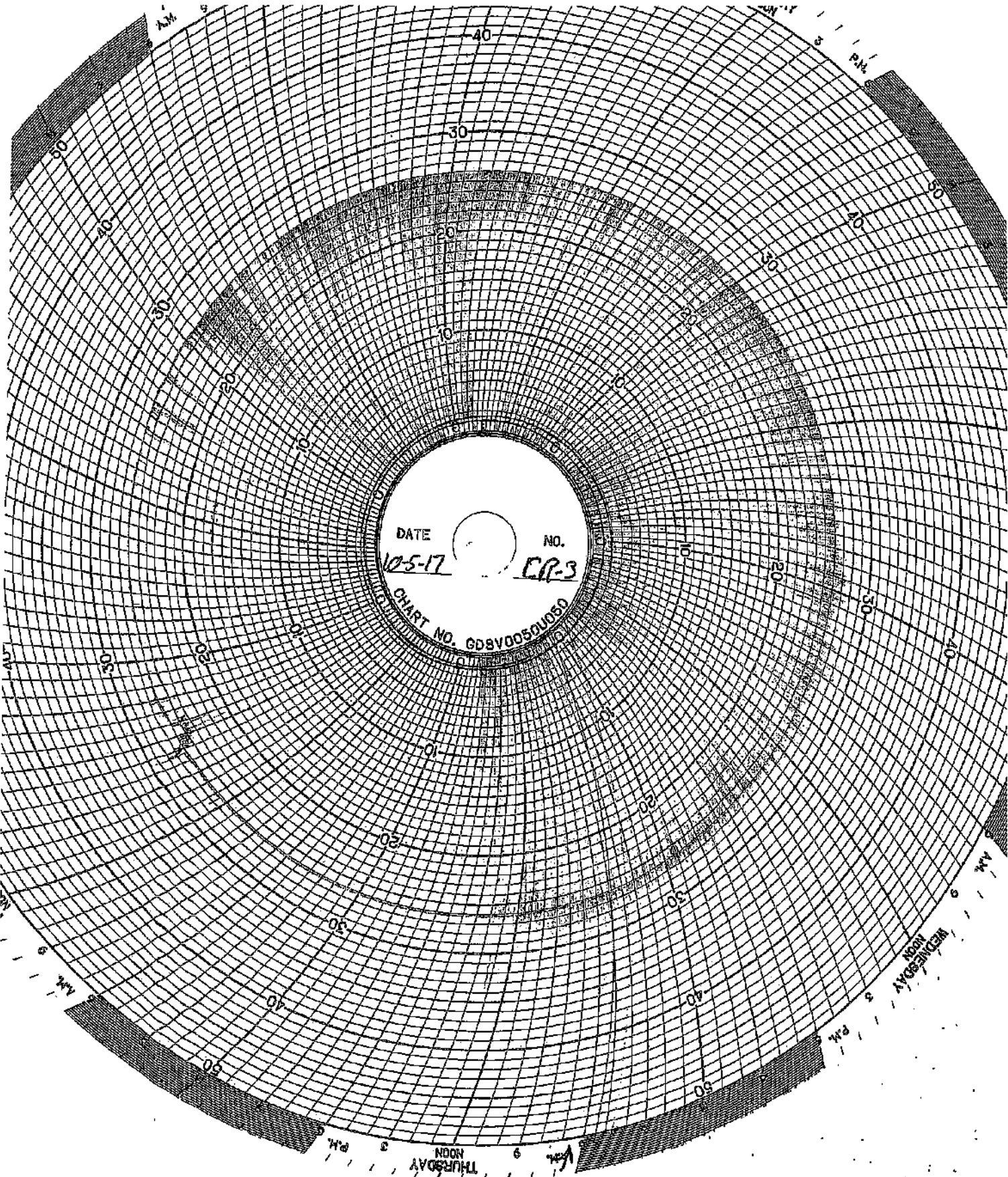
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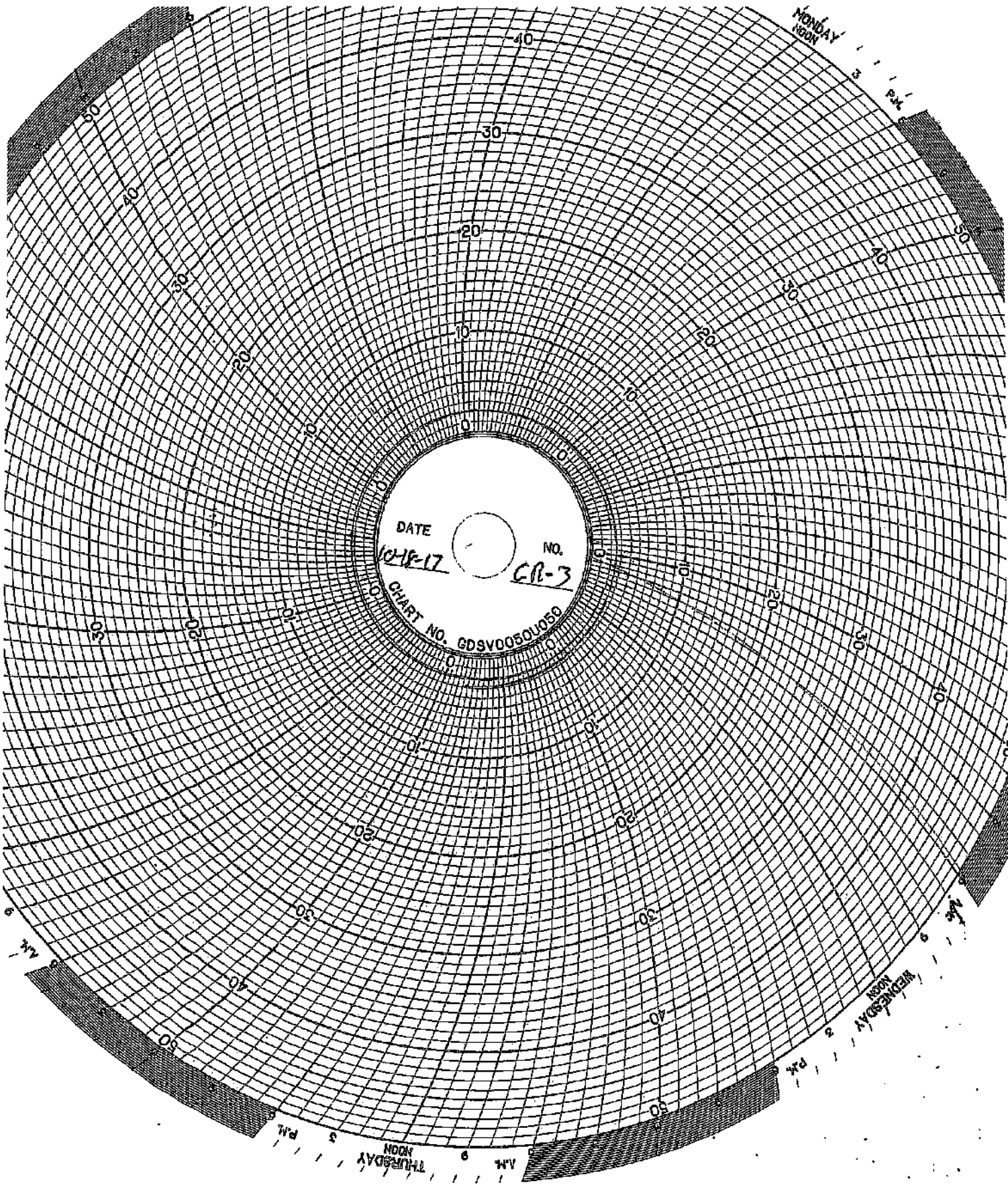


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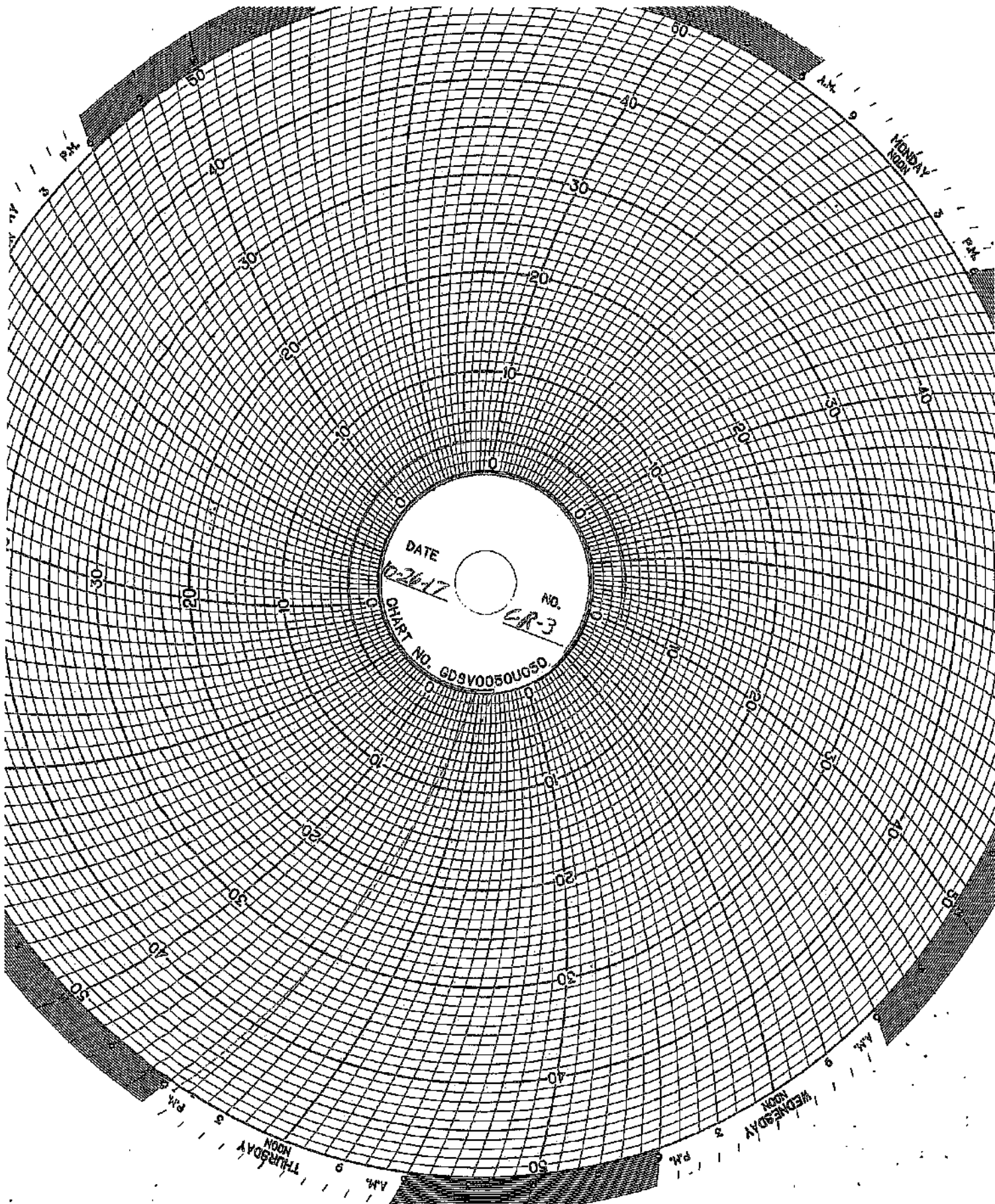
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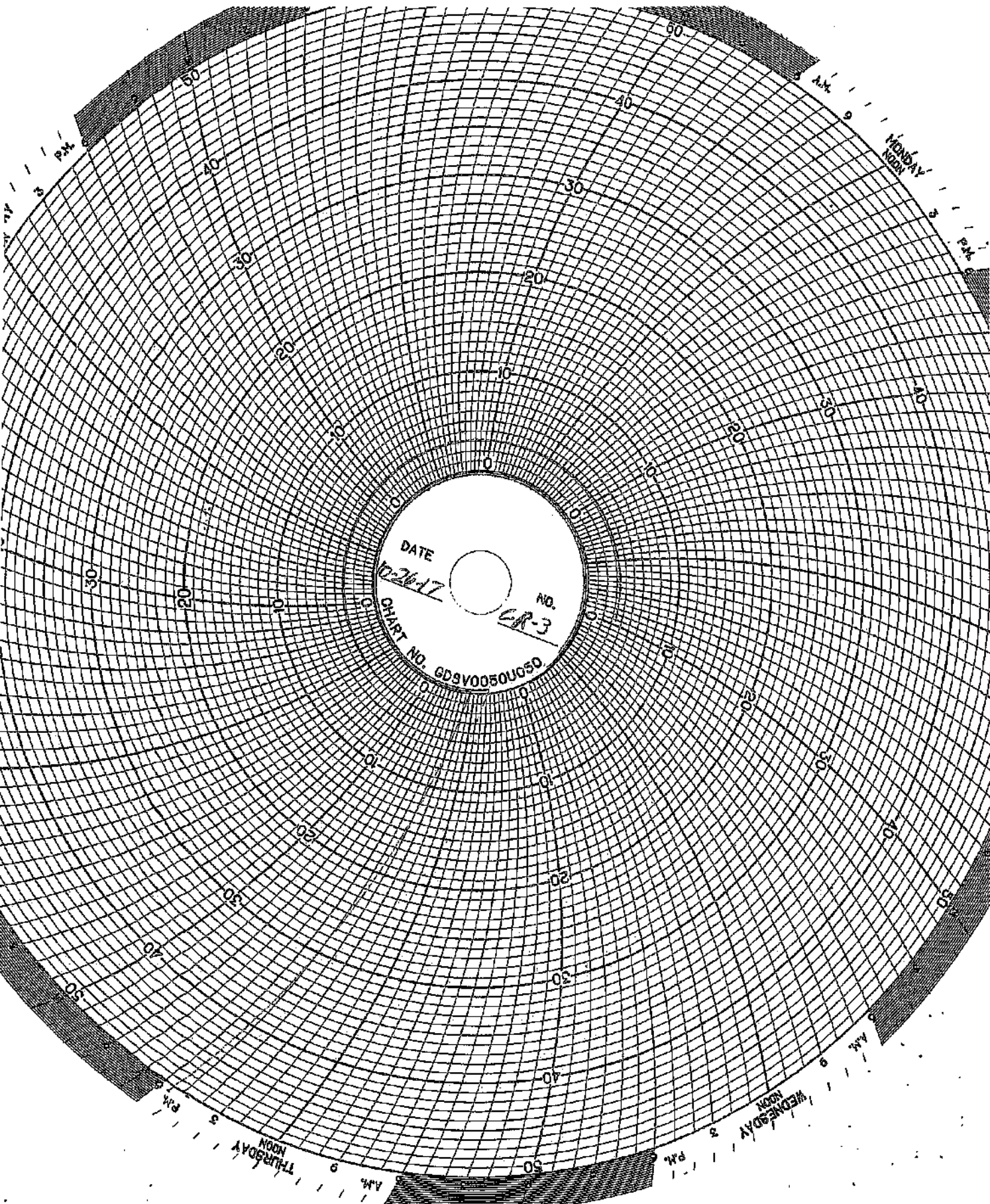
10-26-17

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MAINTENANCE LOG

UIC Monthly Maintenance Log

10/18/2017	Well 1	Replaced wellhead valve tree
10/19/2017	Well 1	Replaced wing valve with new stainless steel valve

CORROSION MONITORING

CORROSION MONITORING COUPONS VISUAL DESCRIPTION

Oct 11, 2017

Fiberglass Coupon

The coupon is dark orange (rust) in color with similar semi-smooth textures on both sides. Its cut edges appear sanded. The coupon is free of pits, cracks, swelling, wicking and blemishes.

Hastelloy Coupon

This coupon is identified as C276 with Serial Number 5. The coupon is silver in color with a lightly sandblasted texture. It is clean and free of pits, cracks, and blemishes. There appears to be no effect on this coupon.

Stainless Steel Coupon

The coupon had experienced substantial corrosion. The coupon is seriously pitted and corroded. Continuous affect takes place with this coupon.

**CORROSION MONITORING PLAN
COUPON SUMMARY**

Date	Hastelloy	Stainless Steel	Fiberglass	
	(C267)	(316L)	(Redbox)	
12/19/2013	13.330 g	10.848 g	7.309 g	Initial Mass @ start up
2/21/2014	13.329 g	10.846 g	7.306 g	
3/10/2014	13.327 g	10.845 g	7.300 g	
4/18/2014	13.324 g	10.841 g	7.272 g	
5/30/2014	13.328 g	10.818 g	7.226 g	
6/30/2014	13.321 g	10.337 g	7.196 g	
7/11/2014	13.323 g	10.304 g	7.196 g	
8/12/2014	13.328 g	10.045 g	7.182 g	
9/17/2014	13.321 g	9.997 g	7.090 g	
10/30/2014	13.321 g	9.387 g	7.075 g	
11/21/2014	13.320 g	9.386 g	7.069 g	
12/19/2014	13.321 g	9.315 g	7.084 g	
1/12/2015	13.321 g	9.289 g	7.063 g	
2/23/2015	13.339 g	9.286 g	7.005 g	
3/31/2015	13.339 g	9.286 g	7.005 g	
4/27/2015	13.335 g	9.130 g	6.852 g	
5/21/2015	13.336 g	9.124 g	6.809 g	
6/12/2015	13.334 g	9.126 g	6.819 g	
7/27/2015	13.337 g	9.127 g	6.818 g	
8/26/2015	13.337 g	9.022 g	6.780 g	
9/21/2015	13.336 g	8.987 g	6.792 g	
10/19/2015	13.335 g	8.985 g	6.797 g	
11/16/2015	13.334 g	8.982 g	6.788 g	
12/17/2015	13.334 g	8.933 g	6.791 g	
1/29/2016	13.334 g	8.931 g	6.788 g	New stainless steel coupon
2/16/2016	13.332 g	8.799 g	6.757 g	
3/31/2016	13.339 g	9.286 g	7.005 g	
4/22/2016	13.333 g	8.590 g	6.744 g	
5/31/2016	13.334 g	6.084 g	6.784 g	
6/30/2016	13.328 g	10.942 g	6.793 g	
8/3/2016	13.326 g	10.529 g	6.743 g	
8/29/2016	13.325 g	10.020 g	6.723 g	
10/27/2016	13.325 g	8.765 g	6.708 g	
11/29/2016	13.327 g	8.571 g	6.740 g	
12/12/2016	13.323 g	8.223 g	6.717 g	
1/3/2017	13.325 g	8.059 g	6.712 g	
2/28/2017	13.324 g	7.634 g	6.727 g	
3/24/2017	13.325 g	7.370 g	6.732 g	
4/28/2017	13.325 g	6.736 g	6.736 g	
5/11/2017	13.323 g	7.352 g	6.689 g	
6/12/2017	13.323 g	7.357 g	6.689 g	
7/5/2017	13.323 g	7.355 g	6.689 g	
8/30/2017	13.324 g	7.353 g	18.105 g	
9/28/2017	13.325 g	7.352 g	18.060 g	
10/11/2017	13.324 g	7.350 g	18.038 g	

CORROSION MONITORING COUPONS BASELINE VISUAL DESCRIPTION

November 4, 2013

Fiberglass

The fiberglass coupon is Red Box 2000 type and is 2-1/2 inches long by 1/2 inch wide and 1/4 inches thick. It is a dark orange (rust) in color with a glossy shine on one side a polished look on the opposite side and the cut edges look sanded.

Hastelloy

The hastelloy coupon is identified as C276 with serial number 1. The dimensions of the coupon are 3 inches long by 1/2 inch wide and 1/4 inch thick. The coupon is silver in color with a lightly sandblasted surface.

Stainless Steel

The stainless steel coupon is identified as 316L with serial number C1582. The dimensions of the coupon are 3 inches long by 1/2 inch wide and 1/4 inch thick. The coupon is silver in color with a lightly sandblasted surface.

Ghesquiere Plastic Testing, Inc.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-6585
FAX (313) 885-1771

Report Date: November 15, 2013
Test Date: October 15 - November 14, 2013

Report #1310-77651
Performed for:
Environmental Geo-Technologies
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

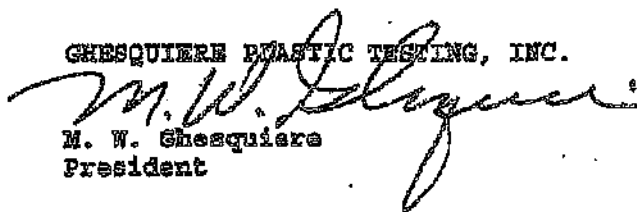
The following determination was made based upon the above test:

BARCOL HARDNESS

	<u>Hardness</u>
Specimen 1	90

Specimen is being returned with this report for further evaluation.

Ghesquiere Plastic Testing, Inc.


M. W. Ghesquiere
President

MWG/kni

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TOTAL 1 PAGES

GHESEQUIERE PLASTIC TESTING, INC.

20460 HARPER AVENUE
HARPER WOODS, MI 48226
PHONE (810) 885-8535
FAX (810) 885-1771

Report Date: February 17, 2014
Test Date: February 14 - 17, 2014

Report #1402-78036
Performed for:
Environmental Geo-Technologies
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.
(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

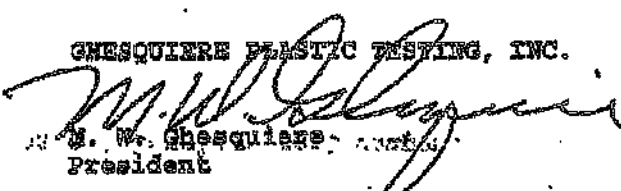
BARCOL HARDNESS

Hardness

Specimen 1: 90

Specimen was returned to the client on February 17, 2014.

GHESEQUIERE PLASTIC TESTING, INC.


M. W. Ghesquiere
President

MWG/dm

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TOTAL 1 PAGES

Ghesquiere Plastic Testing, Inc.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-3535
FAX (313) 885-1771

Report Date: June 16, 2014
Test Date: June 13 - 16, 2014

Report #1406-78499
Performed for:
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

BARCOL HARDNESS

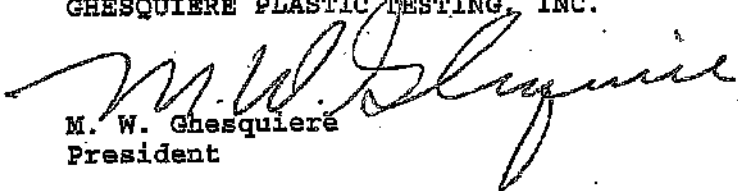
Hardness

Specimen 1

85

Specimen was returned to the client June 16, 2014.

Ghesquiere Plastic Testing, Inc.


M. W. Ghesquiere
President

MWG/dm



October 2, 2014

- TEST REPORT -

PN 118325

PO Attn: John Frost

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By:

Mississa Martin
Sr. Project Technician

Approved By:

Jim Drummond
Physical & Plastics Testing, Manager



An A2LA ISO 17025 Accredited Testing Laboratory — Certificate Numbers 255.01 & 255.02
ISO 9001:2008 Registered

ISO 9001:2008
Registered

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www.arld.com

2867 Glchrist Rd. | Akron, Ohio 44305 | arld@ardl.com
Toll Free: (800) 636-ARDL | World Wide: (330) 794-6600 | Fax: (330) 794-6610



October 2, 2014

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN118325

SUBJECT: Barcol Hardness on one material,
PO# Attn: John Frost

RECEIVED: One small section identified as: Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a

Results

Barcol Hardness, Instant

97

Prepared By:



Melissa Martin
Sr. Project Technician

Approved By:



Scott W. Yates
Plastics Testing Assistant Manager



Progress Through Innovation, Technology and Customer Satisfaction

October 22, 2015

TEST REPORT

PN 125322
PO 00154

PLASTICS TESTING DEPARTMENT

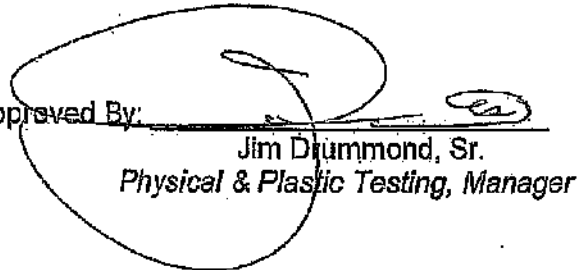
Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By:


Melissa Martin
Sr. Project Technician

Approved By:


Jim Drummond, Sr.
Physical & Plastic Testing, Manager



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AKRON RUBBER DEVELOPMENT LABORATORY, INC.

Progress Through Innovation, Technology and Customer Satisfaction

October 22, 2015

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN 125322

SUBJECT: Barcol Hardness on one material.

RECEIVED: One small section identified as; Fiberglass Coupon.


BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

Results

Barcol Hardness, Instant

96

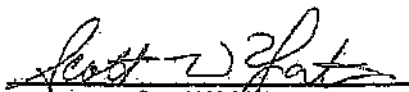
Prepared By:



Melissa Martin
Sr. Project Technician

to

Approved By:



Scott W. Yates
Plastics Testing Assistant Manager



Progress Through Innovation, Technology and Customer Satisfaction

December 12, 2016

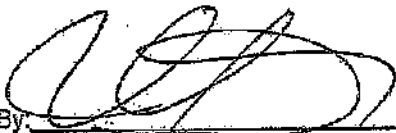
TEST REPORT


PN 132662
PO

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: 
Melissa Martin
Senior Project Technician

Approved By: 
Jim Durnin
Physical Testing, Manager

Rev 041916



An A2LA ISO 17025 Accredited Testing Laboratory — Certificate Numbers 265.01 & 265.02
ISO 9001:2008 Registered



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December 12, 2016

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN 132662


SUBJECT: Barcol Hardness on one (1) material.

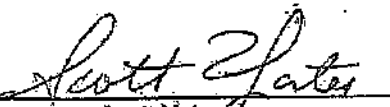
RECEIVED: One (1) small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

RESULTS

Barcol Hardness, Instant 96

Prepared By: 
Melissa Martin
Senior Project Technician

Approved By: 
Scott Yates
Plastics Testing, Assistant Manager

wk

ARDL is ISO 17025 accredited by A2LA for the test methods listed on the certificates referenced on page one. NOTE: Non-ISO 17025 accredited test methods are designated with the ^ symbol to differentiate from ISO 17025 accredited methods in the body of the test report.

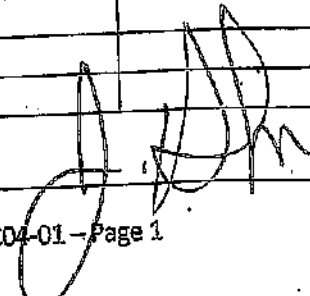
**INJECTION
FINGERPRINTS**

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	6:00pm	10/01/17
Receiving ID#	I10011701	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	G.A.	
Sampled by	AW	

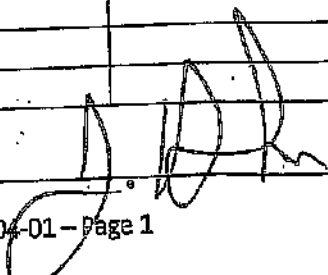
Compatible? (RT#)	<input checked="" type="checkbox"/> Yes	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	> 140		Magnesium	
pH (S.U.)	6.9		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.02		TDS	1.49
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	65°F			
Conductivity	29.0 mS			
% Solids	1.5			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	0.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	10th Sem	10 / 5 / 17
Receiving ID#	I 1003 17 01	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H	
Sampled by	AW	

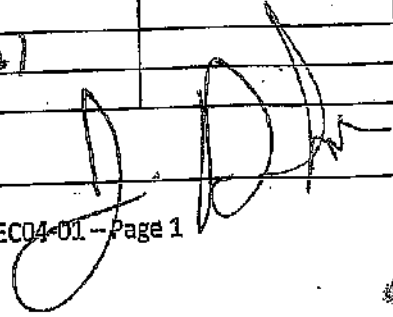
Compatible? (RT#)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	>140		Magnesium	
pH (S.U.)	2.3		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.04		TDS	3.07
Physical Description			Resistivity	
Stream Consistency	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Sulfate	
Oil in Sample	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Temperature	67°F			
Conductivity	59.9 μS			
% Solids	30			
Turbidity	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Color (visual)				
TSS (%)	<0.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	6:56pm	10/03/17
Receiving ID#	I10031704	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	M.B.	


Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	>140		Magnesium	
pH (S.U.)	2.60		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.04		TDS	2.77
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	74°F			
Conductivity	53.8mS			
% Solids	2.7			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	10.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	12:00pm	10 1 04 117
Receiving ID#		T 10 04 17 01
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by		J.H
Sampled by		AW

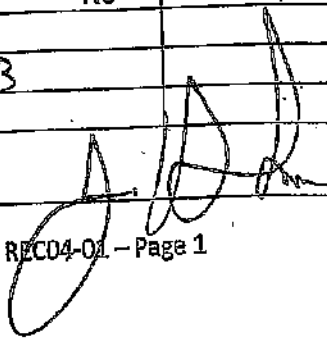
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>146	Magnesium	
pH (S.U.)	0.7	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	1.5%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	151.9 μS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	12:00am	10 / 05 / 17
Receiving ID#	I 10051701	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	RW	

Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	> 140		Magnesium	
pH (S.U.)	6.4		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.02		TDS	2107
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	71°F			
Conductivity	39.2			
% Solids	2.3			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	0.3			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

Date	7:00PM	10/05/17
Receiving ID#	F 10051702	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by	J.H.	
Sampled by	[Signature]	

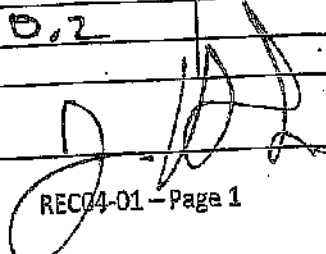
Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	>140		Magnesium	
pH (S.U.)	7.3		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.02		TDS	2.0
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	91°F			
Conductivity	40.2 us			
% Solids	2.1			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	0.1			
Radiation Screen (as needed)				
Lab Signature	[Signature]			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	1:00 AM	10106117
Receiving ID#		E10061701
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by		J.H
Sampled by		TE

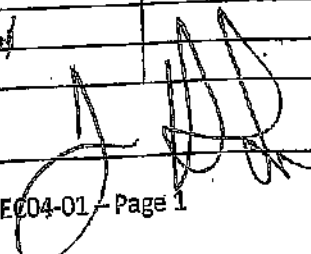
Compatible? (RT#)	Yes	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	140		Magnesium	
pH (S.U.)	7.2		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.03		TDS	2.0
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	75°F			
Conductivity	38.8			
% Solids	2.2			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	0.2			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	12:00	10 11 137
Receiving ID#	71011101	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by	J.H.	
Sampled by	AW	

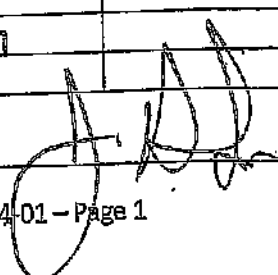
Compatible? (RT#)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	> 140		Magnesium	
pH (S.U.)	3.0		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.04		TDS	2.6%
Physical Description			Resistivity	
Stream Consistency	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Sulfate	
Oil in Sample	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Temperature	60°F			
Conductivity	50.9 mS			
% Solids	2.6			
Turbidity	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Color (visual)				
TSS (%)	LOD			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	7:00 PM	10/12/17
Receiving ID#	E10121701	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	Jim T	

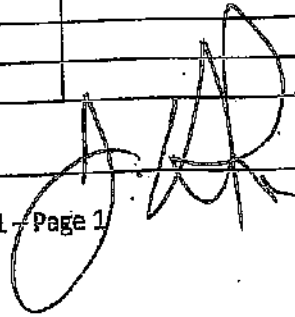
Compatible? (RT#)	Yes	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	>140		Magnesium	
pH (S.U.)	0.6		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.12		TDS	11.0 ?
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	64°F			
Conductivity	218.6 μmS			
% Solids	11.0			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	<0.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

Date	12:00 pm	10 / 13 / 17
Receiving ID#	I 1013 17 01	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	D.W.	

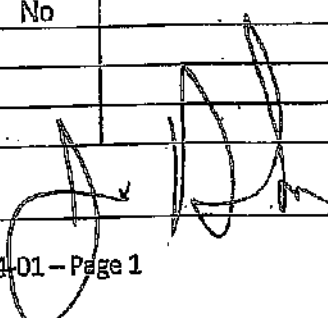
Compatible? (RT#)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.09	TDS	7.87
Physical Description		Resistivity	
Stream Consistency	Yes <input type="checkbox"/> No <input type="checkbox"/>	Sulfate	
Oil in Sample	Yes <input type="checkbox"/> No <input type="checkbox"/>		
Temperature	64°F		
Conductivity	156.3 μS		
% Solids	7.8		
Turbidity	Yes <input type="checkbox"/> No <input type="checkbox"/>		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

Date	11:39 AM	10/15/17
Receiving ID#	110131702	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	B	

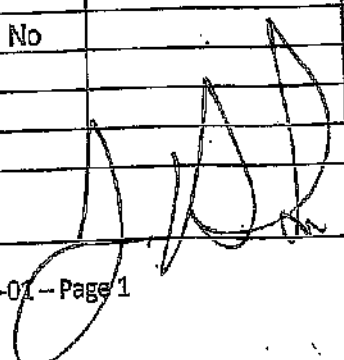
Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	> 140		Magnesium	
pH (S.U.)	1.4		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.05		TDS	3.27
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	64°F			
Conductivity	65.5 mS			
% Solids	3.3			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	0.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	10:05 pm	10 / 16 / 17
Receiving ID#	I10161702	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	AW	

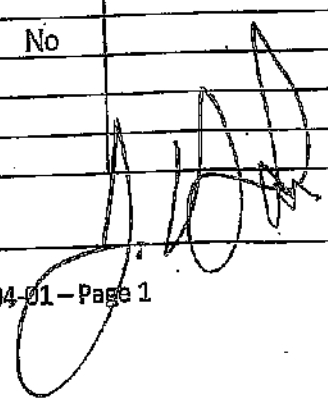
Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	> 140		Magnesium	
pH (S.U.)	2.9		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.04		TDS	2.6 ?
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	60°F			
Conductivity	51.5 mS			
% Solids	2.6			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	< 0.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	402 pm	10/17/17
Receiving ID#	E10171701	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	MB	

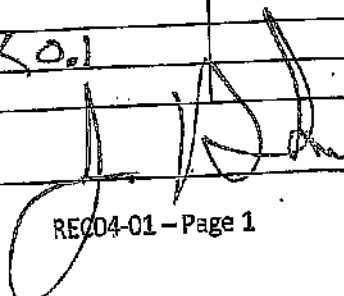
Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	140		Magnesium	
pH (S.U.)	1.2		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.05		TDS	2.37
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	68°F			
Conductivity	45.2 mS			
% Solids	2.3			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	<0.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	12.04	10 / 18 / 17
Receiving ID#	Σ 1018 17 01	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	J.H.	
Sampled by	AW	

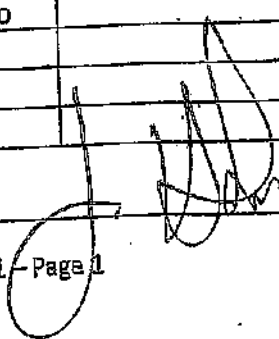
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	2140	Magnesium	
pH (S.U.)	1.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.04	TDS	2.16%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	66°F		
Conductivity	52.0 mS		
% Solids	2.16		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

Date	1:44 PM	10/18/17
Receiving ID#	E10181707	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by		
Sampled by	MB	

Compatible? (RT#)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	> 140		Magnesium	
pH (S.U.)	0.5		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.12		TDS	25.22
Physical Description			Resistivity	
Stream Consistency	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Sulfate	
Oil in Sample	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Temperature	66°F			
Conductivity	> 400.0 μS			
% Solids	25.2			
Turbidity	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Color (visual)				
TSS (%)	< 0.1			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	13:00 PM	10/23/17
Receiving ID#	I10231702	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by		
Sampled by	<i>[Signature]</i>	

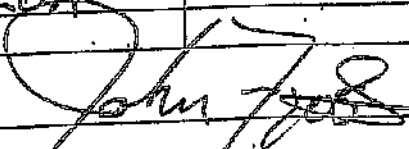
Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	> 140°F		Magnesium	
pH (S.U.)	5.9		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.02		TDS	0.8%
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	64°F			
Conductivity	32 mS			
% Solids	0.3%			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	20.1			
Radiation Screen (as needed)	<i>[Signature]</i>			
Lab Signature	<i>[Signature]</i>			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	7:50	10/23/17
Receiving ID#		E 102517 02
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by		
Sampled by		AW

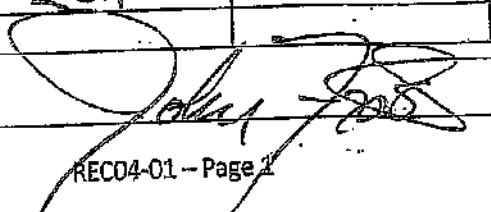
Compatible? (RT#)	<input checked="" type="radio"/> Yes	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	2140°F		Magnesium	
pH (S.U.)	6.7		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.02		TDS	2.6%
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	66°F			
Conductivity	20.2 uS			
% Solids	2.6%			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	2.6%			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date: 9:06 AM	10/24/17
Receiving ID#	I 10241701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	
Sampled by	MJB


Compatible? (RT#)	<input checked="" type="radio"/> Yes <input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	210°F	Magnesium	
pH (S.U.)	5.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.03	TDS	3.1%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	67°F		
Conductivity	22.7 mS		
% Solids	3.1%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	20.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

Date	5:20p	10 124 117
Receiving ID#	I 10241702	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by	PS	
Sampled by	AW	

Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CG Waste Only)?			Total Iron	
Flash Point (°F)	>140 °F		Magnesium	
pH (S.U.)	6.6		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.02		TDS	10%
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil In Sample	Yes	No		
Temperature	65°F			
Conductivity	22 mS			
% Solids	10%			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	170			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	9:50 am 10/25/17
Receiving ID#	210251702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	PS
Sampled by	AW


Compatible? (RT#)	<input checked="" type="radio"/> Yes <input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	7140 °F	Magnesium	
pH (S.U.)	1.4	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.09	TDS	
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	65 °F		
Conductivity	44 mS		
% Solids	4%		
Turbidity	Yes No		
Color (visual)			
TSS (%)			
Radiation Screen (as needed)	21%		
Lab Signature	PS		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	6:5P	10/25/17
Receiving ID#	T10251702	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	BS	
Sampled by	AW	


Compatible? (RT#)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	7140 ^{OP}		Magnesium	
pH (S.U.)	1.3		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.10		TDS	476
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil In Sample	Yes	No		
Temperature	650P			
Conductivity	64mS			
% Solids	4%			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	<1%			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

Date	10:30 AM	10/26/17
Receiving ID#	F10261701	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by	PS	
Sampled by	KF	

Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	7140°F		Magnesium	
pH (S.U.)	1.7		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.04		TDS	6%
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil In Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	65°F			
Conductivity	30 uS			
% Solids	6%			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	21%			
Radiation Screen (as needed)				
Lab Signature				

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	9:10a	10 127 117
Receiving ID#	I10271701	
Manifest# Line:		
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	RS	
Sampled by	JKF	

Compatible? (RT#)	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	71400F		Magnesium	
pH (S.U.)	1.3		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.08		TDS	4%
Physical Description			Resistivity	
Stream Consistency	<input type="radio"/> Yes	<input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes	<input type="radio"/> No		
Temperature	65°F			
Conductivity	63 mS			
% Solids	4%			
Turbidity	<input type="radio"/> Yes	<input type="radio"/> No		
Color (visual)				
TSS (%)	21%			
Radiation Screen (as needed)				
Lab Signature	Pm			


FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

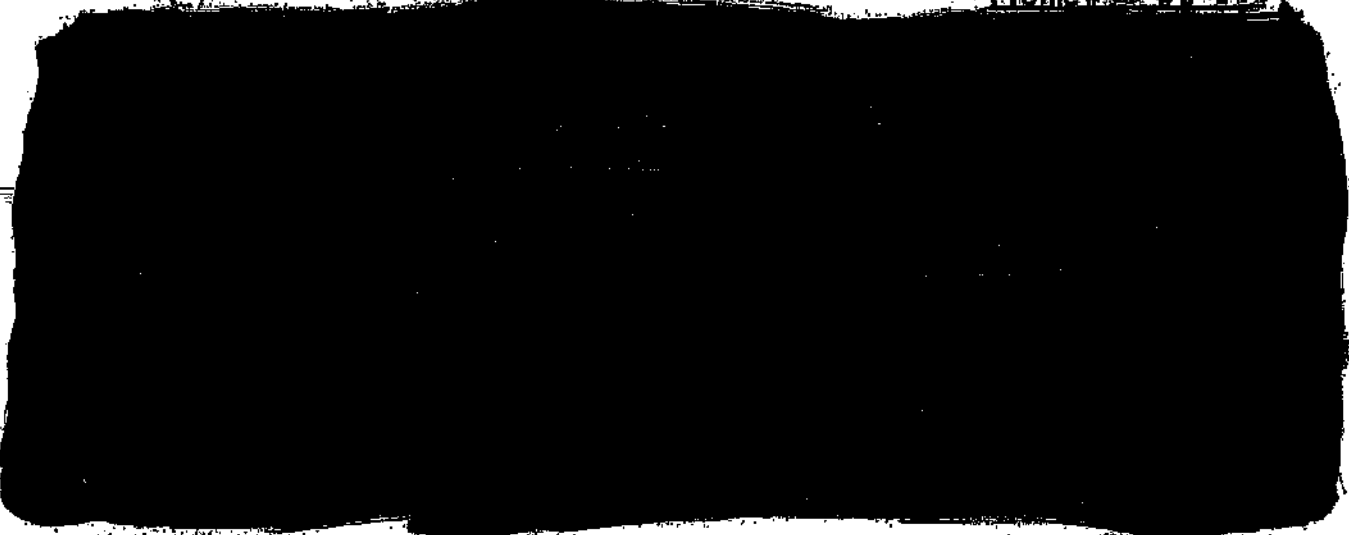
RECEIVING & APPROVAL FORM

Date	10/30/17
Receiving ID#	E 10301701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	PS
Sampled by	

Shice
No
Time

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	7140°F	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.12	TDS	7%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	65°F		
Conductivity	185 μS		
% Solids	7%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	21%		
Radiation Screen (as needed)			
Lab Signature			

**WASTE STREAMS
CHARACTERIZATIONS**



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Alcon Kleen / Surtec Mix

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

1st tank of cleaning process and rinse aluminum plating line.

USEPA/STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PCBs, etc.)
- List ALL Applicable Waste Codes: 029L

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input checked="" type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input type="checkbox"/> Other: _____	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 2-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> < 0.8 <input type="checkbox"/> 1.0 - 1.2 <input type="checkbox"/> 0.8 - 1.0 <input type="checkbox"/> 1.3 - 1.4 Exact/ Other: _____	accepted 100 10.20.17
---	--	---	---	-----------------------------

pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: < 73°F 73 - 100°F 101 - 140°F 141 - 200°F > 200°F None Closed Cup Open Cup

VOC CONCENTRATION - _____ PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
<u>Alcon Kleen</u>	<u>25</u>	<u>75</u>			
<u>Surtec</u>	<u>25</u>	<u>75</u>			

Metals: Indicate if this waste contains any of the following metals, if Generator knowledge provide backup
 Lab Analysis Generator Knowledge TCLP TOTAL

	Not Present	Concentration	Not Present	Concentration						
PCB	<input checked="" type="checkbox"/>	_____ ppm	Aromatic Amine	<input checked="" type="checkbox"/>	_____ ppm	Arsenic (As)	D004	<input checked="" type="checkbox"/>	< 5 ppm	_____ ppm
Dioxin	<input checked="" type="checkbox"/>	_____ ppm	Pesticides	<input checked="" type="checkbox"/>	_____ ppm	Barium (Ba)	D005	<input checked="" type="checkbox"/>	< 100 ppm	_____ ppm
Cyanides Reactive	<input checked="" type="checkbox"/>	_____ ppm	Rodenticides	<input checked="" type="checkbox"/>	_____ ppm	Cadmium (Cd)	D006	<input checked="" type="checkbox"/>	< 1 ppm	_____ ppm
Cyanides Total	<input checked="" type="checkbox"/>	_____ ppm	Fungicides	<input checked="" type="checkbox"/>	_____ ppm	Chromium (Cr)	D007	<input checked="" type="checkbox"/>	< 5 ppm	_____ ppm
Sulfides Reactive	<input checked="" type="checkbox"/>	_____ ppm				Lead (Pb)	D008	<input checked="" type="checkbox"/>	< 5 ppm	_____ ppm
Sulfides Total	<input checked="" type="checkbox"/>	_____ ppm				Mercury (Hg)	D009	<input checked="" type="checkbox"/>	< 0.2 ppm	_____ ppm
						Selenium (Se)	D010	<input checked="" type="checkbox"/>	< 1 ppm	_____ ppm
						Silver (Ag)	D011	<input checked="" type="checkbox"/>	< 5 ppm	_____ ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive Water Reactive Oxidizer Shock Sensitive Reactive (other) DOT Explosives
 NIOSH Human-Positive Carcinogens NESHAP Wastes (Benzene, etc.) Biological None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name Non-Hazardous Liquid Hazard Class _____ UNNA _____
4. Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Totes
5. Number of Units to Ship Now: 5000 6. Anticipated Volume / Units per Year: 5000 or One Time
6. Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory requirements.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: PLEASE collect a representative liquid sample of the waste described in the above referenced GENERATOR'S WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

Material Safety Data Sheet



ALUMA KLEEN

SECTION I - IDENTIFICATION

MANUFACTURER'S NAME Haviland Products Company
MANUFACTURER'S ADDRESS 421 Ann St., N.W., Grand Rapids, MI 49504
PHONE NUMBER..... (616) 361-6691
EMERGENCY PHONE NUMBER CHEMTREC (800) 424-9300
EFFECTIVE DATE..... 07/29/05
TRADE NAME..... ALUMA KLEEN
CHEMICAL FAMILY..... Miscellaneous Blend

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	OSHA PEL	TLV (Units)	CAS NUMBER
**Sulfuric Acid (11.0% Max. by wt)	1 mg/m ³ TWA	1mg/m ³ TWA	7664-93-9
Ammonium Bifluoride (ammonium acid fluoride)	Not Established	Not Established	1341-49-7
**Ethylene Glycol Monobutyl Ether(6.0% Max. By wt)	25 ppm, 120 mg/m ³ , TWA	25 ppm, 121 mg/m ³ , TWA	111-76-2
SEE NOTE UNDER "REFERENCES" AT END OF MSDS	-	-	-

SECTION III - PHYSICAL DATA

BOILING POINT 250°F
FREEZING POINT <32°F
VAPOUR PRESSURE Not Established
VAPOUR DENSITY (air=1) >1
SOLUBILITY IN H₂O Completely
ODOUR AND APPEARANCE Clear to turbid colorless liquid; Solvent Odor
SPECIFIC GRAVITY 1.06
pH Not Established

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASHPOINT AND METHOD OF DETERMINATION Will Not Burn
LOWER EXPLOSIVE LIMIT (% by Volume) Not Applicable
UPPER EXPLOSIVE LIMIT (% by Volume) Not Applicable
MEANS OF EXTINCTION..... As for Surrounding Fires
SPECIAL FIRE FIGHTING PROCEDURES Wear self-contained breathing apparatus and full protective clothing.
UNUSUAL FIRE HAZARD..... Reacts with most metals to give flammable, potentially explosive hydrogen gas. Some decomposition occurs upon heating. Fumes are corrosive and toxic.

Material Safety Data Sheet

SECTION V - HEALTH HAZARD DATA

CARCINOGENICITY, REPRODUCTIVE EFFECTS None
NTP? No
IARC MONOGRAPHS? No
OVER EXPOSURE EFFECTS Irritation; Burns
PRIMARY ROUTE(S) OF ENTRY Inhalation, Eye and Skin Contact
SPECIFIC FIRST AID PROCEDURES In case of contact: Immediately flush eyes and skin with plenty of water for at least 15 minutes. For eyes, get medical attention. If inhaled: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention. Ingestion: Do not induce vomiting. CONTACT PHYSICIAN IMMEDIATELY!! Possible fluoride poisoning.
EXPOSURE AGGRAVATED MEDICAL CONDITIONS None Currently Known

SECTION VI - REACTIVITY DATA

CHEMICAL STABILITY Stable
CONDITIONS TO AVOID Unstable at high temperatures.
INCOMPATIBLE MATERIALS Alkaline solutions, most metals, reducing agents, cyanides, sulfides, carbides, oxidizing agents (concentrated), alkaline oxides, acid anhydrides, organic acids, halogens, phosphorus trichloride, aldehydes, monomers, polymerizable esters, and hydrogen with palladium.
HAZARDOUS DECOMPOSITION PRODUCTS Hydrogen fluoride, ammonia, sulfur dioxide, sulfur trioxide.
HAZARDOUS POLYMERIZATION Will Not Occur
POLYMERIZATION AVOID Not Applicable

SECTION VII - SPILL OR LEAK PROCEDURE

LEAK AND SPILL PROCEDURES Contain spills. Soak up with sand or earth and place in dry, marked container. Neutralize residue with lime or soda ash and flush with water to waste treatment system.
WASTE DISPOSAL Dispose of solid waste in an approved landfill. Comply with federal, state and local regulations.

SECTION VIII - SPECIAL PROTECTION

RESPIRATORY PROTECTION NIOSH/MSHA approved self-contained breathing apparatus.
VENTILATION To maintain vapors below limits.
PROTECTIVE GLOVES Rubber or other impervious materials.
EYE PROTECTION Splash proof chemical goggles.
OTHER PROTECTIVE EQUIPMENT For operations where spills or splashing may occur, use an impervious body covering and boots. A safety shower and eye bath should be available.
HANDLING PROCEDURES AND EQUIPMENT Store away from sparks, flame and excessive heat. Keep containers tightly closed when not in use. Emptied containers retain product residues.

SECTION IX - SPECIAL PRECAUTIONS

HAZARD CLASS Corrosive, 8, PG II
DOT SHIPPING NAME Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric Acid)
UN NUMBER UN3264
REPORTABLE QUANTITY (RQ) 2000 lb.

Material Safety Data Sheet

REFERENCES

HMIS: H-3;F-0;R-1

ALUMAKL

****NOTE**** Hazardous Component(s) subject to reporting under 40 CFR 372 (SARA Title III, Sec. 313).

enthone

Safety Data Sheet

Safety Data Sheet

Section 1. Identification

Product name : SUR TEC 650 chromital TCP™
 Product code : 424939
 Uses advised against : Consumer, private households, general public
 Product type : Liquid.
 Validation date : 1/23/2014.

Manufacturer - Supplier	Telephone no.:	Fax no.	Emergency phone:
Enthone Inc 360 Frontage Road West Haven, CT 06516	Tel: (203) 934-8611	Fax:(203) 799-8179	DOMESTIC NORTH AMERICA 800-424-9300 INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted)
Cockson Enthone Chemistry Trading (Shanghai) Co., Ltd, Rm 201, No.388 of Muhua North Road, Fengxian District, Shanghai	Tel: 86-21-8390 0600	Fax: 86-21-50912810	Tel: 0532-8388 9090 (24- hour)
Enthone Chemistry A Division of Cookson Singapore Pte Ltd 26 Tuas West Road Singapore 633382	Tel: (65) 6861 1773	Fax: (65) 68611145	Tel: (65) 6861 1773
ENTHONE SDN. BHD. Lot 34 & 36 Lorong IKS Juru 7 Taman Perindustrian Ringan Juru 14100 Simpang Ampat Seberang Perai Selatan Penang, Malaysia	Tel: 60 - 4 507 7787	Fax: 60 4 507 0621	Tel: 60 4 507 7787
Enthone Korea 1Ra 310, Sihwa Industrial Complex, 1247-9, Jungwang-Dong, Siheung-Si, Gyeonggi-Do, Korea	Tel: 82-31-432-4100	82-31-433-1476	Tel: 82-31-432-4100
Enthone Inc, Taiwan Branch 2F, B Building, No. 10, Lu-Shing Street, Luchu Hsiang, 338 Taoyuan, Taiwan	Tel: 03-312-0280	Fax: 03-312-0360	Tel: 886-937408981
Alent Japan Company - Enthone 480-28 Higashitoyoda, Hiratsuka, Kanagawa 254-0082, Japan	Tel: 81-463-51-4330	Fax: 81-463-55-2588	Tel: 81-(0)463-51-4330
Enthone India A Division of Cookson India Pte. Ltd Developed Plot no 16, North Phase, SIDCO Industrial estate, Ambattur, Chennai - 600098.	Tel: 91-44-26252666	Fax: 91-44-26256627	Tel: 91-44-26252666

Section 2. Hazards identification

Classification of the substance or mixture : Not regulated.

GHS label elements

Signal word : Not applicable

Hazard statements : No known significant effects or critical hazards.

Continued on next page

Section 2. Hazards identification

Precautionary statements

- Prevention** : Read label before use. Do not breathe dust or mist. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
- Response** : No special measures required.
- Storage** : No special measures required.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : Not available.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Inhalation** : Get medical attention if symptoms occur. Move exposed person to fresh air. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Ingestion** : Get medical attention if symptoms occur. Get medical attention if symptoms appear. Move exposed person to fresh air. Wash out mouth with water. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.
- Skin contact** : Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Get medical attention if irritation occurs. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open.

Over-exposure signs/symptoms

See section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

Section 5. Fire-fighting measures

Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : No specific data.

Continued on next page

Section 5. Fire-fighting measures

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Remark** : Not available.

Section 6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Precautions for safe handling** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Put on appropriate personal protective equipment (see section 8). Use only with adequate ventilation. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Be sure area is equipped with all necessary emergency equipment including fire extinguishers, and spill response materials. Empty containers retain product residue and can be hazardous. Do not reuse product container.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Ingredient name	Exposure limits
None.	

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.
- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Avoid contact with eyes. Use safety eyewear designed to protect against splash of liquids.
- Skin protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Avoid contact with skin and clothing. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Green.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : 3.1 to 4
- Melting point** : 0°C (32°F)
- Boiling point** : 100°C (212°F)
- Flash point** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.

Continued on next page

Section 9. Physical and chemical properties

Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.005
Solubility	: Soluble in the following materials: cold water and hot water.
Octanol/water partition coefficient	: Not available.
Decomposition temperature	: Not available.
Auto-ignition temperature	: Not available.
Viscosity	: Not available.

Section 10. Stability and reactivity

Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatibility with various substances	: Reactive with oxidizing agents.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Routes of entry : Inhalation, Ingestion.

Potential health effects

Inhalation	: MAY CAUSE RESPIRATORY TRACT IRRITATION.
Ingestion	: May cause irritation.
Skin	: May cause skin irritation.
Eyes	: May cause eye irritation.

Additional information:

Section 12. Ecological information

Ecotoxicity : Not available.

Aquatic and terrestrial toxicity

Product/ingredient name	Test	Result
Not available.		

Conclusion/Summary : Not available.

Persistence/degradability

Product/ingredient name	Test	Result
Not available.		

Conclusion/Summary : Not available.

Continued on next page

Section 12. Ecological information

Product/Ingredient name	Aquatic half-life	Photolysis
Not available.		

Bioaccumulative potential

Product/Ingredient name	LogP _{ow}	BCF
Not available.		

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG* Label	Additional information
DOT Classification	Not regulated.	-	-	-	-
IMDG Class	Not regulated.	-	-	-	-
IATA-DGR Class	Not regulated.	-	-	-	-
UN Class	Not regulated.	-	-	-	-

PG* : Packing group

Section 15. Regulatory information

China

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Korea

a. Regulation according to ISHA

ISHA Article 37 : None of the components are listed.

ISHA Article 38 : None of the components are listed.

b. Regulation according to TCCA

TCCA Toxic chemicals : Not applicable

TCCA Observational chemicals : None of the components are listed.

TCCA Article 32 (Banned) : None of the components are listed.

TCCA Article 32 (Restricted) : None of the components are listed.

Continued on next page

Section 15. Regulatory information

c. Dangerous Materials Control Act : Not available.

Europe

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

Japan

Poisonous and Deleterious Substances

Ingredient name	Status
None of the components are listed.	

ISHL

ISHL Class :

Working Conditions Act; Health and Safety Act :

ISHL Prevention of Tetraalkyl Lead Poisoning : Not listed

ISHL Harmful Substances Subject to Obtaining Permission for Manufacturing : Not listed

ISHL Harmful Substances, Prohibited for Manufacturing : Not listed

ISHL Chemicals requiring notification : Not listed

ISHL Dangerous Substances : Not listed

List of Specially Controlled Industrial Waste : Not listed

Pollutant Release and Transfer Registers (PRTR) : Not listed

Fire Service Law - Obstructive materials : Not listed

Taiwan

International lists

United States TSCA : TSCA 5(a)2 proposed significant new use rules: No products were found.
TSCA 5(a)2 final significant new use rules: No products were found.
TSCA 12(b) one-time export: No products were found.

TSCA 12(b) annual export notification: No products were found.

United States inventory (TSCA 8b) : All components are listed or exempted.

Section 16. Other information

History

Validation date : 1/23/2014.
Supersedes Date : 3/27/2013.
Prepared by : T. Valverde
(203)-799-4940
Enthone Inc
350 Frontage Road
West Haven, CT 06516
Phone: (203) 934-8611
Fax: (203) 799-8179
www.enthone.com

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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enthone®
an Alent plc Company

HAVILAND PRODUCTS COMPANY SAFETY DATA SHEET



Section 1: Identification

Product Name: Alumina Kleen Product Code: H001534

Haviland Products Company
421 Ann Street NW
Grand Rapids, MI 49504
(616) 361-6691

Emergency Phone
CHEMTREC (800) 424-9300
CHEMTREC International (703) 527-3887

Product Use: NA
Not recommended for: NA

DEC 22 2015

Section 2: Hazard(s) Identification

GHS Ratings:

Corrosive to metals	1	Corrosive to metals
Oral Toxicity	Acute Tox. 4	Oral >300+ <=2000mg/kg
Dermal Toxicity	Acute Tox. 4	Dermal >1000+ <=2000mg/kg
Inhalation Toxicity	Acute Tox. 3	Gases >500+ <=2500ppm, Vapors >2+ <=10mg/l
Skin corrosive	1A	Dusts & mists >0.5+ <=1mg/l
Eye corrosive	1	Destruction of dermal tissue: Exposure < 3 min. Observation < 1 hour, visible necrosis in at least one animal
Carcinogen	1B	Serious eye damage: Irreversible damage 21 days after exposure, Draize score: Corneal opacity >= 3, Iritis > 1.5
Reproductive toxin	2	Presumed Human Carcinogen, Based on demonstrated animal carcinogenicity
Organ toxin single exposure	1	Human or animal evidence possibly with other information
Organ toxin repeated exposure	1	Significant toxicity in humans- Reliable, good quality human case studies or epidemiological studies, Presumed significant toxicity in humans- Animal studies with significant and/or severe toxic effects relevant to humans at generally low exposure (guidance)
Aquatic toxicity	A2	Significant toxicity in humans- Reliable, good quality human case studies or epidemiological studies Presumed significant toxicity in humans- Animal studies with significant and/or severe toxic effects relevant to humans at generally low exposure (guidance)

GHS Hazards

H290	May be corrosive to metals
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
H350	May cause cancer
H361	Suspected of damaging fertility or the unborn child

GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P234	Keep only in original container
P260	Do not breathe dust/fume/gas/mist/vapors/spray
P261	Avoid breathing dust/fume/gas/mist/vapors/spray

H370
H372

Causes damage to organs
Causes damage to organs
through prolonged or repeated
exposure
Toxic to aquatic life

H401

P264	Wash face, hands, and any exposed skin thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required
P310	Immediately call a POISON CENTER or doctor/physician
P311	Call a POISON CENTER or doctor/physician
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P314	Get Medical advice/attention if you feel unwell
P321	Specific treatment (see first aid treatment on SDS)
P322	Specific measures (see first aid treatment on SDS)
P330	Rinse mouth
P363	Wash contaminated clothing before reuse
P390	Absorb spillage to prevent material damage
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302+P352	IF ON SKIN: Wash with soap and water
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P307+P311	IF exposed: Call a POISON CENTER or doctor/physician
P308+P313	IF exposed or concerned: Get medical advice/attention
P405	Store locked up
P406	Store in a corrosive resistant container with a resistant inner liner
P403+P233	Store in a well ventilated place. Keep container tightly closed
P501	Dispose of contents/container in accordance with local/regional/national/international regulations

Danger



Section 3: Composition/Information on Ingredients

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Sulfuric acid 7664-93-9 10 to 20%	1 mg/m ³ TWA	0.2 mg/m ³ TWA (thoracic fraction)	NIOSH: 1 mg/m ³ TWA
Trade Secret 5 to 10%	50 ppm TWA; 240 mg/m ³ TWA	20 ppm TWA	NIOSH: 5 ppm TWA; 24 mg/m ³ TWA
Ammonium bifluoride 1341-49-7 5 to 10%			
Trade Secret 1 to 5%			

Section 4: First-aid Measures

Inhalation

Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention. To prevent aspiration, keep head below knees.

Eye Contact

Immediately flush eyes with water. Flush eyes with water for a minimum of 15 minutes, occasionally lifting and lowering upper lids. Get medical attention promptly.

Skin Contact

Remove contaminated clothing. Wash skin with soap and water. Get medical attention. Wash clothing separately and clean shoes before reuse.

Ingestion

If swallowed, do NOT induce vomiting. Give victim a glass of water. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Section 5: Fire-fighting Measures

LEL: 1.00

UEL:

Extinguishing Media

Use media suitable for the surrounding fires.

Specific Hazards Arising from the Chemical

Reacts with most metals to give flammable, potentially explosive hydrogen gas. Some decomposition occurs upon heating. Fumes are corrosive and toxic.

Special Protective Equipment and Precautions for Firefighters

Special information: As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Contain spills. Soak up with sand or earth and place in dry, marked container. Neutralize residue with lime or soda ash and flush with water to waste treatment system.

Section 7: Handling and Storage**Handling Procedures**

Use with adequate ventilation. Avoid breathing dusts, mists, and vapors. Do not get in eyes, on skin, or on clothing. Wear eye protection and protective clothing. Wash thoroughly after handling.

STORAGE: Keep away from heat, sparks, and flame. Store containers in a cool, well ventilated place. Keep container closed when not in use. Protect from direct

Section 8: Exposure Control/Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Sulfuric acid 7664-93-9	1 mg/m ³ TWA	0.2 mg/m ³ TWA (thoracic fraction)	NIOSH: 1 mg/m ³ TWA
Trade Secret N/A	50 ppm TWA; 240 mg/m ³ TWA	20 ppm TWA	NIOSH: 5 ppm TWA; 24 mg/m ³ TWA
Ammonium bifluoride 1341-49-7			
Trade Secret N/A			

Engineering Controls

Provide ventilation sufficient to maintain exposure below the recommended limits.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant the use of a respirator.

SKIN PROTECTION: Wear impervious protective gloves. Wear protective gear as needed - apron, suit, boots.

EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.

OTHER PROTECTIVE EQUIPMENT: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

HYGENIC PRACTICES: Do not eat, drink, or smoke in areas where this material is used. Avoid breathing vapors. Remove contaminated clothing and wash before reuse. Wash thoroughly after handling. Wash hands before eating.

Section 9: Physical and Chemical Properties

Appearance: Clear to turbid colorless Vapor Pressure: Unknown Vapor Density: >1 Density: Unknown Freezing point: <32°F Boiling range: 250°F Evaporation rate: Unknown Explosive Limits: Unknown Autoignition temperature: Unknown Viscosity: Unknown	Odor: Solvent Odor Odor threshold: Unknown pH: Unknown Melting point: Unknown Solubility: Completely Flash point: Unknown Flammability: Unknown Specific Gravity: 1.08 Decomposition temperature: Unknown Grams VOC less water: Unknown
---	--

Section 10: Stability and Reactivity**Chemical Stability:**

STABLE

Incompatible Materials

Alkaline solutions, most metals, reducing agents, cyanides, sulfides, carbides, oxidizing agents (concentrated), alkaline oxides, acid anhydrides, organic

acids, halogens, phosphorus trichloride, aldehydes, monomers, polymerizable esters, and hydrogen with palladium.

Conditions to Avoid

Unstable at high temperatures.

Hazardous Decomposition Products

Hydrogen fluoride, ammonia, sulfur dioxide, sulfur trioxide.

Hazardous Polymerization

Hazardous polymerization will not occur.

Section 11: Toxicology Information

Mixture Toxicity

Oral Toxicity LD50: 1,791 mg/kg

Dermal Toxicity LD50: 1,877 mg/kg

Inhalation Toxicity LC50: 5 mg/L

Component Toxicity

Routes of Entry:

Inhalation

Ingestion

Skin contact

Eye contact

Blood System

Eyes

Kidneys

Liver

Central Nervous System

Skin

Respiratory

Effects of Overexposure

CAS Number

7664-93-9

Description

Sulfuric acid

% Weight

10 to 20%

Carcinogen Rating

Sulfuric acid: IARC: Human carcinogen

IARC: Human carcinogen

OSHA: listed

Section 12: Ecological Information

Component Ecotoxicity

Sulfuric acid

96 Hr LC50 Brachydanio rerio: >500 mg/L [static]

Trade Secret

96 Hr LC50 Lepomis macrochirus: 1490 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 2950 mg/L

48 Hr EC50 Daphnia magna: >1000 mg/L

Section 13: Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14: Transportation Information

Refer to Bill of Lading or container label for DOT or other transportation hazard classification, if any.

Section 15: Regulatory Information

CERCLA/SARA Hazardous Substances

1341-49-7 Ammonium bifluoride

7664-93-9 Sulfuric acid

DEA List I and II Chemicals

7664-93-9 Sulfuric acid

SARA 313

7664-93-9 Sulfuric acid

TSCA 8(b) Inventory

Trade Secret

1341-49-7 Ammonium bifluoride

Trade Secret

7664-93-9 Sulfuric acid

Country

Regulation

All Components Listed

Section 16: Other Information

Date Prepared: 6/4/2015

Disclaimer

Reviewer Revision

The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.

MATERIAL SAFETY DATA SHEET - SurTec 650 ChromitAL TCP

Manufacturer: CST-SurTec Inc.
6801 Engle Road
Suite J
Middleburg Heights, Ohio 44130
(440)-239-9710

NFPA Rating

Health: 2
Flammability: 0
Reactivity: 0

Latest Revision Date for MSDS Information: September 27, 2004

Information on this product is on file with CHEMTREC. FOR EMERGENCY ASSISTANCE CALL 1-800-424-9300. If water pollution occurs, notify appropriate authorities.

Trade Name: SurTec 650 ChromitAL TCP
Product Identification Number: Not Established
General or Generic Id: Liquid Trivalent Passivate

This product does not contain material(s) listed as toxic chemicals as defined by the requirements of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III - Section 313, nor does it contain material(s) which are listed as hazardous chemicals as defined by OSHA's Hazard Communication Standard (29 CFR 1910.1200).

Vapor Density: Heavier than Air
Solubility in Water: Complete
Appearance and Odor: Green Liquid with Slight Odor
Specific Gravity: 0.995 - 1.015
Percent Volatiles: Approx. 95%
Evaporation Rate: Slower than Ether

Flammability Classification (DOT): Not Flammable
Flash Point: Does Not Apply
Extinguishing Media: Water Fog, Dry Chemical, Foam, and CO₂
Special Fire Fighting Procedures: Positive pressure, self-contained breathing apparatus and protective clothing should be worn by firefighters in areas where product would be stored.
Unusual Fire & Explosion Hazards: Thermal decomposition may produce Hydrogen Fluoride. Do not let water run-off enter waterways or sewer system.

Effects of Overexposure:

Eyes: Mild irritant. Prolonged or repeated contact may cause irritation and redness.
Skin: Mild irritant. Prolonged or repeated contact may cause irritation.
Breathing: Inhalation of mists or liquid may be irritating to mucous membranes of the upper respiratory tract.
Swallowing: Industrial chemicals are never to be taken internally. May be irritating to mucous membrane of the digestive tract.

First Aid:

If in Eyes: Flush with clean water for 15 minutes. Contact a Physician. Washing eyes within 1 minute after contact is essential to achieve maximum effectiveness.
If on Skin: Immediately wash skin with soap and plenty of water. Remove contaminated clothing and do not re-use until laundered.
If Inhaled: Remove victim to fresh air. Seek medical attention. If breathing has stopped, start artificial respiration.
If Swallowed: Do not induce vomiting. Give large quantities of milk and/or water. Seek immediate medical attention.

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FEB 05 2008

BY:

MATERIAL SAFETY DATA SHEET - SurTec 650 Chromital TCP

Stability: Stable
Conditions to Avoid: See SECTION IX.
Incompatibility (Materials to Avoid): None Known
Hazardous Decomposition Products: Thermal decomposition may produce Hydrogen Fluoride.
Hazardous Polymerization: Will not occur

Steps to be Taken in Case of a Spill:

Small Spill: Stop leaks. Contain spill. Carefully cover with absorbent material and shovel into closeable containers for proper disposal.
Large Spill: Stop leaks. Contain spill. Remove as much as possible for routine use. Carefully cover with absorbent material and shovel into closeable containers for proper disposal.

Waste Disposal Method:

Small Spill: Dispose of in accordance with Federal, State, and Local regulations.
Large Spill: After recovery, dispose of in accordance with Federal, State, and Local regulations.

Respiratory Protection: Use appropriate NIOSH approved respiratory equipment for dust and mists.
Ventilation: Exhaust ventilation to maintain air contamination below TLV. Mechanical ventilation recommended.
Protective Gloves: Neoprene, Rubber
Eye Protection: Chemical Splash Proof Goggles or Face Shield
Other Protective Equipment: Rubber Apron. Safety showers and eye wash stations should be near handling areas.

Precautions to be Taken in Storing or Handling:

Keep containers closed when not in use. Protect from freezing. Store away from any incompatible materials listed in Section VI - Reactivity Data.

Other Precautions:

Do not let material enter natural waterways or sewer system.

DOT Proper Shipping Name: Not Regulated
DOT Proper Hazard Class: Not Regulated
DOT ID Number: Not Regulated
Precautionary Labels: None Required

U.S. TSCA Inventory: All components are included on the U.S. TSCA Inventory.

THE INFORMATION PRESENTED HEREIN HAS BEEN COMPILED FROM SOURCES CONSIDERED TO BE DEPENDABLE AND IS ACCURATE TO THE BEST OF THE SELLER'S KNOWLEDGE. HOWEVER, SELLER MAKES NO WARRANTY WHATSOEVER, EXPRESSED, IMPLIED, OR MERCHANTABILITY REGARDING THE ACCURACY OF SUCH DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SELLER ASSUMES NO RESPONSIBILITY FOR INJURY TO BUYER OR TO THIRD PERSONS OR FOR ANY DAMAGE TO ANY PROPERTY AND BUYER ASSUMES ALL SUCH RISKS.

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

28470 Clinton Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile

Profile # **01212**

GENERATOR INFORMATION



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Dyes & Sealers / Anodizing Line Pans

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

Spent bath solutions from metal finishing line

USEPA / STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PCBs, etc.)
- List ALL Applicable Waste Codes: D002 D007 D010

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input checked="" type="checkbox"/> Black/Brown <input type="checkbox"/> Other _____	Suspended Solids: <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> >5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other _____	acceptable 100217
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pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: <73°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOC CONCENTRATION - 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
Water	40	94	Hydrochloric Acid	0	1
Hydrochloric Acid	1	5	Sodium Hydroxide	0	5
Sulfuric Acid	0	5	Dyes	5	50
Nitric Acid	0	1.5	Scale	0	5
Sulfuric Acid	0	4	Sodium Sulfate	0	2.5

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup
 Lab Analysis Generator Knowledge TCLP TOTAL

	Not Present	Concentration		Not Present	Concentration				
PCB	<input checked="" type="checkbox"/>	_____ ppm	Aromatic Amines	<input checked="" type="checkbox"/>	_____ ppm	Arsenic (As)	D004	<input type="checkbox"/> < 5 ppm	_____ ppm
Bioxins	<input checked="" type="checkbox"/>	_____ ppm	Pesticides	<input checked="" type="checkbox"/>	_____ ppm	Barium (Ba)	D009	<input type="checkbox"/> < 100 ppm	_____ ppm
Cyanides Reactive	<input checked="" type="checkbox"/>	_____ ppm	Rodenticides	<input checked="" type="checkbox"/>	_____ ppm	Cadmium (Cd)	D008	<input type="checkbox"/> < 1 ppm	_____ ppm
Cyanides Total	<input checked="" type="checkbox"/>	_____ ppm	Fungicides	<input checked="" type="checkbox"/>	_____ ppm	Chromium (Cr)	D007	<input checked="" type="checkbox"/> < 5 ppm	_____ ppm
Sulfides Reactive	<input checked="" type="checkbox"/>	_____ ppm				Lead (Pb)	D008	<input type="checkbox"/> < 3 ppm	_____ ppm
Sulfides Total	<input checked="" type="checkbox"/>	_____ ppm				Mercury (Hg)	D009	<input type="checkbox"/> < 0.2 ppm	_____ ppm
						Selenium (Se)	D010	<input checked="" type="checkbox"/> < 1 ppm	_____ ppm
						Silver (Ag)	D011	<input type="checkbox"/> < 5 ppm	_____ ppm

TCLP Organics D012 - D043 above regulatory limits Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive Water Reactive Oxidizer Shock Sensitive Reactive (other) DOT Explosives
 NIOSH Human-Positive Carcinogens NESHAQ Wastes (Benzene, etc.) Biological None Apply

SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds _____
- DOT Shipping Name 20,111,321,04, Waste Corrosive Liquid, Acidic ^{Inorganic, n.o.s.} Hazard Class 8 UN 11132104
 PG III ERG _____ Hazardous Constituents for "n.o.s." _____
- Method of Shipment: Bulk Tanker Van Truck Rail Car Drums Totes
- Number of Units to Ship Now: 4000-1000 Anticipated Volume / Units per Year: 1 x / year or One Time
- Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and the material safety data sheet.

GENERATOR'S COPY OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-quart sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 49 CFR 261-Appendix E. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.



INFORMATION
 Name of Waste/Common Chemical Name:

CAUSTIC WASTEWATER

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

TSAF BULKING OF CAUSTIC WASTEWATER STREAMS

USEPA / STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PCBs, etc.)
- List ALL Applicable Waste Codes: D002 D004 D005 D006 D007 D008 D010 D011

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <u>VARIES</u>	Suspended Solids <input type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input checked="" type="checkbox"/> 1-3% <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> < 0.8 <input checked="" type="checkbox"/> 1.0 - 1.2 <input type="checkbox"/> 0.8 - 1.0 <input type="checkbox"/> 1.3 - 1.4 Exact / Other _____	acceptable 100317
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pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: < 73°F 73-100°F 101-140°F 141-200°F > 200°F None Closed Cup Open Cup

VOC CONCENTRATION - < 100 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
<u>Sodium Hydroxide</u>	<u>1</u>	<u>20</u> %	<u>ARSENIC, BARIUM, CADMIUM,</u>	<u>0</u>	<u>21</u> %
<u>Potassium Hydroxide</u>	<u>1</u>	<u>20</u> %	<u>CHROMIUM, LEAD, SELENIUM,</u>		
<u>Ammonium Hydroxide</u>	<u>1</u>	<u>10</u> %	<u>SILICA</u>		
<u>Water</u>	<u>Balance</u>				

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup

<input type="checkbox"/> Lab Analysis		<input checked="" type="checkbox"/> Generator Knowledge		<input checked="" type="checkbox"/> TCLP		<input type="checkbox"/> TOTAL	
	Not Present	Concentration		Not Present	Concentration		
PCB	<input checked="" type="checkbox"/>	_____ ppm	Aromatic Amine	<input checked="" type="checkbox"/>	_____ ppm	Arsenic (As)	D004 <input type="checkbox"/> < 5 ppm <u>< 100</u> ppm
Dioxins	<input type="checkbox"/>	_____ ppm	Pesticides	<input checked="" type="checkbox"/>	_____ ppm	Barium (Ba)	D005 <input type="checkbox"/> < 100 ppm <u>< 2000</u> ppm
Cyanides Reactive	<input checked="" type="checkbox"/>	_____ ppm	Rodenticides	<input checked="" type="checkbox"/>	_____ ppm	Cadmium (Cd)	D008 <input type="checkbox"/> < 1 ppm <u>< 20</u> ppm
Cyanides Total	<input checked="" type="checkbox"/>	_____ ppm	Fungicides	<input checked="" type="checkbox"/>	_____ ppm	Chromium (Cr)	D007 <input type="checkbox"/> < 5 ppm <u>< 200</u> ppm
Sulfides Reactive	<input checked="" type="checkbox"/>	_____ ppm				Lead (Pb)	D008 <input type="checkbox"/> < 5 ppm <u>< 200</u> ppm
Sulfides Total	<input checked="" type="checkbox"/>	_____ ppm				Mercury (Hg)	D009 <input checked="" type="checkbox"/> < 0.2 ppm <u>< 0.2</u> ppm
						Selenium (Se)	D010 <input type="checkbox"/> < 1 ppm <u>< 20</u> ppm
						Silver (Ag)	D011 <input type="checkbox"/> < 5 ppm <u>< 100</u> ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*

<input type="checkbox"/> Radioactive	<input type="checkbox"/> Water Reactive	<input type="checkbox"/> Oxidizer	<input type="checkbox"/> Shock Sensitive	<input type="checkbox"/> Reactive (other)	<input type="checkbox"/> DOT Explosives
<input type="checkbox"/> NIOSH Human-Positive Carcinogens	<input type="checkbox"/> NESHAP Wastes (Benzene, etc.)	<input type="checkbox"/> Biological	<input checked="" type="checkbox"/> None Apply		

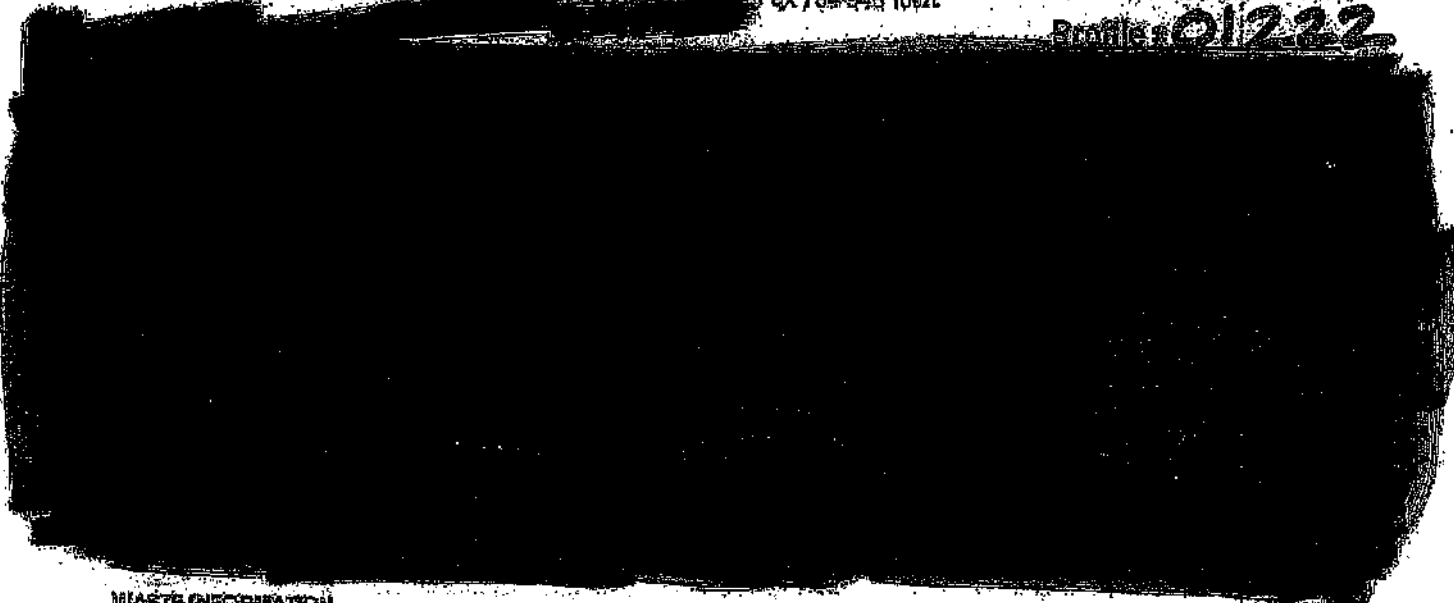
SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds 100
3. DOT Shipping Name WASTE CORROSIVE LIQUID, DANGEROUS, INORGANIC Hazard Class 8 UNNA 3046
4. Method of Shipment: Bulk Tanker Van truck Rail Car Drums Toilet
5. Number of Units to Ship Now: 5,000 GALS. & Anticipated Volume / Units per Year: 60,000 GALS. or One Time
6. Special Handling Requirements including PPE:

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies will be made at the generator's expense.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: PLEASE collect a representative 1-quart sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261 Appendix 1. Fill in the sampling information in the spaces provided below. If you have any questions regarding this process, please contact your Environmental Geo-Technologies representative.



WASTE INFORMATION

Name of Waste/Common Chemical Name: Waste Sulfuric acid

Process Generating Waste (Please be specific; if complete information may delay the approval process):

sent closed off product from holding tank, unopened

USEPA / STATE WASTE IDENTIFICATION

- 1. This waste is solidified to: Non-Hazardous Liquid Industrial Waste Hazardous Waste
- 2. Regulated by TSCA? Yes No (PCNs, etc.)
- 3. List ALL Applicable Waste Codes: D002

PHYSICAL CHARACTERISTICS OF WASTE

<input checked="" type="checkbox"/> White/Clear <input type="checkbox"/> Dark/Brown <input type="checkbox"/> Other	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 2-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> > 5%	Layers <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 1.0-1.5 <input type="checkbox"/> 1.5-1.7 Exact/Other <u>1.80</u>	acceptable 10/26/17
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PH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Points: < 78°F 78-100°F 101-140°F 141-200°F > 200°F None Closed Cup Open Cup

VOC Concentration = 0 ppm (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - (MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT % = 0.1%))

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
Sulfuric acid, 18% SDS	100	100	%		
Water	0	0	%		
			%		
			%		
			%		
			%		

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provides backup Lab Analysis Generator Knowledge TGLP TOTAL

	Not Present		Concentration			Code	Units	Limits
	ppm	ppm	ppm	ppm				
PCBs					Arsenic (As)	D004	ppm	ppm
Dioxins					Barium (Ba)	D005	ppm	ppm
Organics Reactive					Cadmium (Cd)	D006	ppm	ppm
Solvents Total					Chromium (Cr)	D007	ppm	ppm
Solvents Reactive					Lead (Pb)	D008	ppm	ppm
Solvents Total					Mercury (Hg)	D009	ppm	ppm
					Selenium (Se)	D010	ppm	ppm
					Silver (Ag)	D011	ppm	ppm

TGLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked

- Radioactive
- Water Reactive
- Oxidizer
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- MSDH Human Potent Carcinogens
- NESHAP Wastes (Benzene, etc.)
- Biological
- None Apply

SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49 CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds: 3264 **ACIDIC, INORGANIC**
- DOT Shipping Name: RC, UN 1824, waste corrosive liquid, N.O.S. Hazard Class: 8 UN: 3264
- ERG: II ERG: 154 Hazardous Constituents for "n.o.s.": sulfuric acid
- Method of Shipment: Bulk Tanker Vactoruck Rail Car Drums Other
- Number of Drums to Ship Now: _____ 6. Anticipated Volume / Units per Year: _____ or One Time
- Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of these individuals as possible for verifying preparing the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material has been omitted so as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked, I understand that I am certifying that the information is true, accurate, and complete to the best of my knowledge and belief. Any other information is true, accurate, and complete to the best of my knowledge and belief.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS

Please collect a representative 1 quart sample of the waste described in the applicable Generator Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261. Appendix I. Fill in this sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technology representative.



CHEMTRADE LOGISTICS

DISTRIBUTED BY
EVS HOLWOOD CHEMICALS, INC.
10900 Harper Avenue
Detroit, MI 48239
(818) 925-0500

MATERIAL SAFETY DATA SHEET

Sulfuric Acid

(10752)

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sulfuric Acid Formula: H_2SO_4 Molecular Weight: 98.08
Chemical Name: Sulfuric Acid Chemical Family: Inorganic Acid CAS# 7664-93-9
Synonyms: Sulphuric Acid, Hydrogen Sulphate, Oil of Vitriol, Battery Acid
Product Use: Used in manufacture of fertilizers, explosives, other acids, metal pickling and petroleum processing.

Chemtrade Logistics Inc.
141 Garden Baker Road
Suite 501
North York, ON
M2H0R1
(416) 496-5656
(866) 887-8806

Chemtrade Logistics Inc.
8900 W. Central Ave.
Suite L-1
48617
Toledo, OH
(800) 321-6282

Emergency Telephone Number
Chemfree 1-800-424-9300
Canada (613) 866-5666

2. COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	% by WT	CAS Number
Sulfuric Acid	70-100%	7664-93-9
Non-Hazardous Ingredients		
Water	0-30%	7732-18-5

3. HAZARD INFORMATION

EMERGENCY OVERVIEW:

Danger! Extremely corrosive. Causes severe burns and eye damage. Mist causes respiratory irritation. Harmful if inhaled. Harmful or fatal if swallowed. Reacts violently with water. Concentrated Sulfuric Acid will react with many organic materials and may cause fire due to the heat of the reaction. Not flammable, but reacts with many metals to form explosive flammable hydrogen gas. Read the entire MSDS for a more thorough evaluation of the hazards.

National Fire Protection Association (NFPA) Rating
Hazardous Materials Identification System (HMIS) Rating

	NFPA	HMIS
HEALTH	3	3
FLUE	0	0
REACTIVITY	2	2
SPECIAL	W	

CONTROLLED DOCUMENT
IF STAMPED IN RED

0740

- 4 = Extreme/Severe
- 3 = High/serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimum
- W = Water Reactive

Revised Date: July 2001
MSDS
Supersedes:

Received Time Nov: 1 2:54PM

CHEMTRADE LOGISTICS

Page 1 of 11



3. HAZARD INFORMATION (continued)

Exposure Limits:

	ACGIH (TLV)	OSHA (PEL)
Sulfuric Acid	1 mg/m³ (TWA) 3 mg/m³ (STEL)	1 mg/m³ (TWA)

A2 (Mitigation) refers to sulfuric acid contained in strong inorganic acid mixtures suspected human carcinogen

POTENTIAL HEALTH EFFECTS:

Eye Contact: Immediate pain, severe burns and corneal damage, which may result in permanent blindness.

Skin Contact: Causes burns, and brownish or yellow stains. Concentrated solutions may cause second or third degree burns with severe reactions. Prolonged and repeated exposure to dilute solutions may cause irritation, redness, pain and drying and cracking of the skin.

Inhalation: Causes respiratory irritation and at high concentrations may cause severe injury, burns, or death. Effects of exposure may be delayed.

Ingestion: Causes severe irritation or burns of the mouth, throat, and esophagus.

Existing Medical Conditions Possibly Aggravated By Exposure: Skin irritation may be aggravated in individuals with existing skin lesions. Breathing of vapors or sprays (mists) may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis.

Chronic Effects: Repeated exposure may produce erosion and discoloration of teeth.

Carcinogenicity: The International Agency for Research on Cancer (IARC) has concluded that occupational exposure to strong inorganic acid mixtures containing sulfuric acid is carcinogenic to man, causing cancer of the larynx (the voice box) and, to a lesser extent, the lung. Although no direct link has been established between exposure to sulfuric acid itself, and cancer in man, exposure to any mist or aerosol during the use of this product should be avoided and, in any case, keep exposures below the occupational exposure limit for sulfuric acid.

The National Toxicology Program (NTP) does not classify sulfuric acid or strong inorganic acid mixtures as known (or reasonably anticipated to be) human carcinogens.

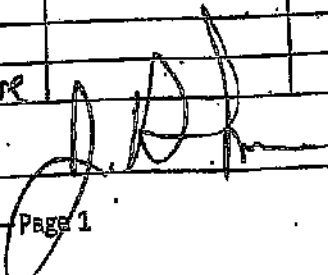
FINGERPRINT FORM

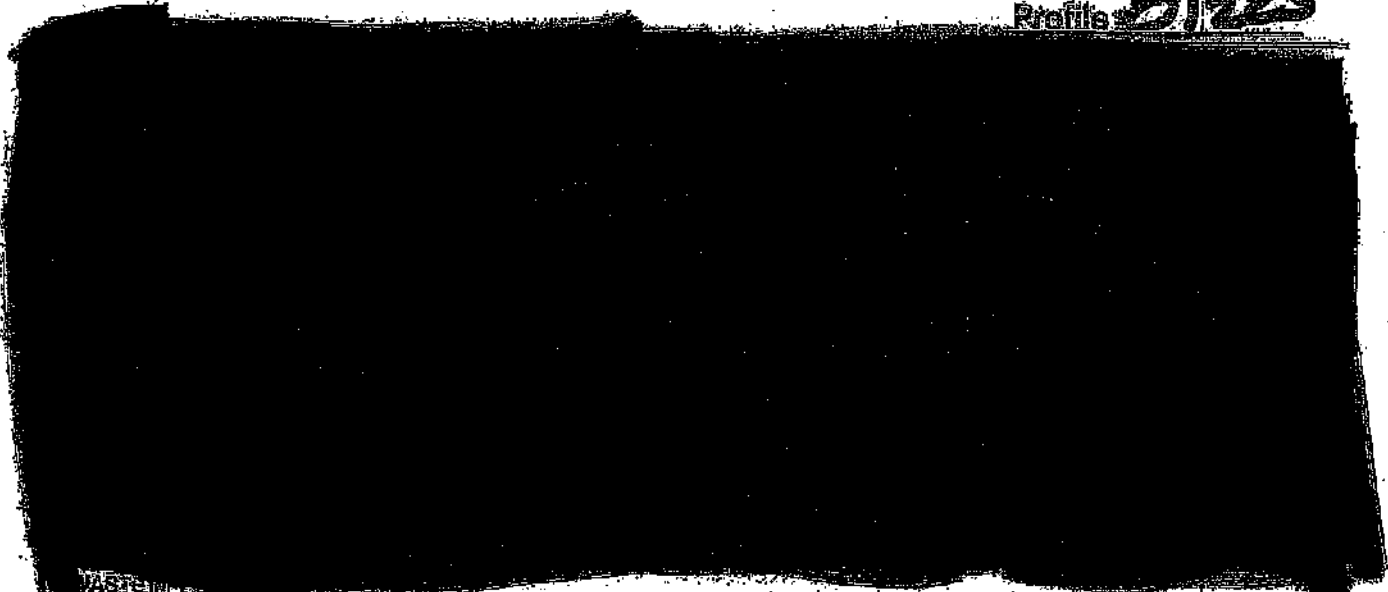
01222

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

Date	10/2/17
Receiving ID#	Sulfuric Acid
Manifest#	Line:
Land Ban Cert Included	Yes No
EGT Approval#	[REDACTED]
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	C. [REDACTED]

Compatible? (RT#)	<input checked="" type="radio"/> Yes <input type="radio"/> No	Barium
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium
TOC (ppm)(CC Waste Only)?	N/A	Total Iron
Flash Point (°F)	>140	Magnesium
pH (S.U.)	<0.1	Sodium Chloride
Cyanides? (mg/L)	<30	Bicarbonate
Sulfides? (ppm)	<200	Carbonate
Specific Gravity	1.80	TDS
Physical Description	Liquid	Resistivity
Stream Consistency	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sulfate
Oil In Sample	Yes <input checked="" type="radio"/> No	
Temperature	77°F	
Conductivity	162.4 μS	
% Solids	8.9	
Turbidity	Yes <input checked="" type="radio"/> No	
Color (visual)	Colorless	
TSS (%)	<0.1	
Radiation Screen (as needed)	Negative	
Lab Signature		



Name of Waste/Common Chemical Name: Waste Sulfur Hydroxide

Process Generating Waste (Please be specific, incomplete information may delay the approval process):
Waste used and product from holding tank, treated.

USEPA STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PBBs, etc.)
- List ALL Applicable Waste Codes: D002

PHYSICAL CHARACTERISTICS OF WASTE

<input type="checkbox"/> Solid <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input type="checkbox"/> Other	Suspended Solids <input type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> >5%	Layers <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input type="checkbox"/> Single Phase	Specific Gravity <input type="checkbox"/> <0.8 <input type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Black/Other	acceptable 10/24/17
--	---	--	--	------------------------

pH: N/A <2 2-4 4-6 6-8 8-10 10-12.5 >12.5

Liquid Flash Point: <78°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOG Concentration: 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
Sulfur Hydroxide see SDS	45	55			%
Water	45	55			%
					%
					%
					%

Metals/Inorganics in this waste contains any of the following metals. If Generator knowledge provide backup
 Lab Analysis Generator Knowledge TGLP TOTAL

Not Concentration Present		Not Concentration Present							
PCP	ppm	Aromatic Amine	ppm	Arsenic (As)	D004	5	ppm		ppm
Ureane	ppm	Pesticides	ppm	Barium (Ba)	D005	100	ppm		ppm
Organics Reactive	ppm	Rodenticides	ppm	Cadmium (Cd)	D006	1	ppm		ppm
Organics Total	ppm	Fungicides	ppm	Chromium (Cr)	D007	100	ppm		ppm
Sulfides Reactive	ppm			Lead (Pb)	D008	5	ppm		ppm
Sulfides Total	ppm			Mercury (Hg)	D009	1	ppm		ppm
				Selenium (Se)	D010	1	ppm		ppm
				Silver (Ag)	D011	5	ppm		ppm

TGLP Organics D012 - D049 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING? At Least One Box Must Be Checked.
 Radioactive Water Reactive Oxidizer Shock Sensitive Reactive (other) DOT Explosives
 NIOSH Human-Pesticide Carcinogens NESHAP Wastes (Benzene, etc.) Biological None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49 CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds 3266
3. DOT Shipping Name basic, inorganic 3266
RO, UN 1993, waste corrosive liquid, N.O.S. Hazard Class 8 UN 1993

PG. II, ERG 154 Hazardous Constituents for "n.o.s." Sodium hydroxide

4. Method of shipment Bulk Tanker Tank Truck Rail Car Drums Other
5. Number of Units to Ship Now _____
6. Special Handling Requirements including PPE _____
7. Anticipated Volume / Units per Year _____ or One Time

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my direct and personal knowledge of these individuals I am responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If the boxes checked, I request Environmental Geo-Technology's not to ignore any inconsistencies. Any corrections Environmental Geo-Technology makes will be consistent with the results of the sample characterization.



GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative quarter sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 49 CFR 261. Appendix 1. (1) In the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact Environmental Geo-Technology's representative.



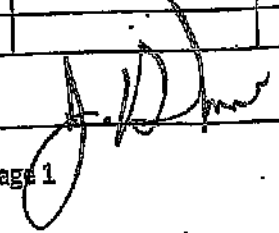
FINGERPRINT FORM

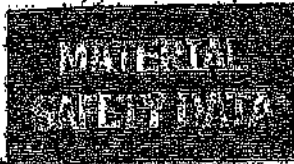
01223

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	10/12/17
Receiving ID#	Sodium Hydroxide
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	Chest

Compatible? (RT#)	<input checked="" type="radio"/> Yes <input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium	
TOC (ppm)(GC Waste Only)?	N/A	Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	9.9	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.40	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sulfate	
Oil in Sample	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Temperature	72°F		
Conductivity	185.4 µS		
% Solids	38.2		
Turbidity	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Color (visual)	Colorless		
TSS (%)	LO		
Radiation Screen (as needed)	Negative		
Lab Signature			



OCEAN NETWORK EMERGENCY PHONE 1-888-255-5111

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD. (REFER TO THE OSHA CLASSIFICATION IN SEC. 2.) THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE. THE EXPOSURE TO THE COMMUNITY, IF ANY, IS QUITE DIFFERENT.

I - PRODUCT IDENTIFICATION

(10152)

Product Name:	Sodium Hydroxide Solution (50%)
Supplier:	Olin Chlor Alkali, Soda, Caustic, Alkali, Dye, Caustic Soda
Chemical Family:	Alkali, Base
Trade Name:	None
See Description:	Neutralizing agent, sodium source
Hazard Classification:	Corrosive, eye and skin hazard, lung irritant
Section 2:	None
Section 3:	None
Section 4:	None
Section 5:	None
Section 6:	None
Section 7:	None
Section 8:	None
Section 9:	None
Section 10:	None
Section 11:	None
Section 12:	None
Section 13:	None
Section 14:	None
Section 15:	None
Section 16:	None
Section 17:	None
Section 18:	None
Section 19:	None
Section 20:	None

II - COMPONENT DATA

Product composition

Chemical Name:	Sodium Hydroxide												
Chemical Number:	1313-52-2												
Hazardous Reg. No. 29 CFR 1910.1200:	Yes												
Exposure Standards:	<table border="1"> <thead> <tr> <th></th> <th>OSHA PEL</th> <th>American</th> </tr> <tr> <th>TLV</th> <td>5 mg/m³</td> <td>5 mg/m³</td> </tr> <tr> <th>STEL</th> <td>15 mg/m³</td> <td>15 mg/m³</td> </tr> <tr> <th>IDLH</th> <td>100 mg/m³</td> <td>100 mg/m³</td> </tr> </thead> </table> <p>* OSHA PEL may be different.</p>		OSHA PEL	American	TLV	5 mg/m ³	5 mg/m ³	STEL	15 mg/m ³	15 mg/m ³	IDLH	100 mg/m ³	100 mg/m ³
	OSHA PEL	American											
TLV	5 mg/m ³	5 mg/m ³											
STEL	15 mg/m ³	15 mg/m ³											
IDLH	100 mg/m ³	100 mg/m ³											

Chemical Name:	Water
Chemical Number:	7732-18-5
Hazardous Reg. No. 29 CFR 1910.1200:	No
Exposure Standards:	None established.



CONTROLLED DOCUMENT
IF STAMPED IN RED
0146



MATERIAL SAFETY DATA

III - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. AVOID BREATHING VAPOR OR MIST.

STORAGE CONDITIONS:

DO NOT STORE AT TEMPERATURES ABOVE: 130° C (266° F)

PRODUCT STABILITY AND COMPATIBILITY:

SHELF LIFE LIMITATIONS:	Indefinite if in closed container.
INCOMPATIBLE MATERIALS FOR PACKAGING:	Aluminum, zinc, tin, wood, paper
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT:	acids, nitrogen containing organics, phosphorous, explosives, organic peroxides, aluminum, zinc, tin, halogenated hydrocarbons

IV - PHYSICAL DATA

Appearance:	Clear, viscous liquid
Freezing Point:	10-12° C (50-54° F)
Boiling Point:	130-140° C (266-284° F)
Decomposition Temperature:	None
Specific Gravity:	1.482-1.53
Bulk Density:	Not Applicable
Sp. G. @ 25° C:	1.2 (0.5% solution)
Vapor Pressure @ 25° C:	Approximately equal to water
Solubility in Water:	Miscible
Volatiles, Percent by Volume:	45-55
Evaporation Rate:	No Data
Vapor Density:	No Data
Molecular Weight:	40.01 (active agent)
Odor:	None
Coefficient of Oil/Water Distribution:	No Data

V - PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Personal Protection for Routine Use of Product:

Respiratory Protection:	If mists, or aerosols are generated and are not controlled below the TLV with ventilation wear a NIOSH approved dust/mist respirator.
Ventilation:	Use local exhaust ventilation to maintain levels to below the TLV.
Skin and Eye Protection:	Wear gloves, boots, face shield with chemical goggles, apron or impermeable suit to avoid skin and eye



CHEMTRADE LOGISTICS

DISTRIBUTED BY
OLYS NOLWOOD CHEMICALS, INC.
10900 Harper Avenue
Detroit, MI 48219
(313) 825-0300

MATERIAL SAFETY DATA SHEET

Sulfuric Acid

(10752)

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sulfuric Acid Formula: H_2SO_4 Molecular Weight: 98.08
Chemical Name: Sulfuric Acid Chemical Family: Inorganic Acid CAS# 7664-93-9
Synonyms: Sulphuric Acid, Hydrogen Sulphate, Oil of Vitriol, Battery Acid
Product Use: Used in manufacture of fertilizers, explosives, other acids, metal pickling and petroleum processing.

Chemtrade Logistics Inc.
111 Gordon Baker Road
Suite 301
North York, ON
M2H 3R1
(416) 496-5856
(888) 887-8805

Chemtrade Logistics Inc.
6800 W Central Ave.
Suite L-1
43617
Tledo, OH
(800) 321-6282

Emergency Telephone Number

Chemtree 1-800-424-9300

Canada (613) 996-6666

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Ingredients</u>	% by Wt.	CAS Number
Sulfuric Acid	70-100%	7664-93-9
<u>Non-Hazardous Ingredients</u>		
Water	0-30%	7732-18-5

3. HAZARD INFORMATION

EMERGENCY OVERVIEW:

Danger! Extremely corrosive. Causes severe burns and eye damage. Mist causes respiratory irritation. Harmful if inhaled. Harmful or fatal if swallowed. Reacts violently with water. Concentrated Sulfuric Acid will react with many organic materials and may cause fire due to the heat of the reaction. Not flammable, but reacts with most metals to form explosive/flammable hydrogen gas. Read the entire MSDS for a more thorough evaluation of the hazards.

National Fire Protection Association (NFPA) Rating
Hazardous Materials Identification System (HMIS) Rating

	NFPA	HMIS
HEALTH	3	3
FIRE	0	0
REACTIVITY	2	2
SPECIAL	W	

CONTROLLED DOCUMENT
IF STAMPED IN RED

0740

- 4 = Extreme/Severe
- 3 = High/Serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimum
- W = Water Reactive

Effective Date: July 2001
MSDS
Supersedes:

Received Time Nov. 1 12:54PM

CHEMTRADE LOGISTICS

Page 1 of 11



Sulfuric Acid

3. HAZARD INFORMATION (continued)

Exposure Limits:

	ACGIH (TLV)	OSHA (PEL)
Sulfuric Acid	1 mg/m ³ (TWA) 3 mg/m ³ (STEL)	1 mg/m ³ (TWA)

A2 (Notations) refers to sulfuric acid contained in strong inorganic acid mists; suspected human carcinogen

POTENTIAL HEALTH EFFECTS:

Eye Contact: Immediate pain, severe burns and corneal damage, which may result in permanent blindness.

Skin Contact: Causes burns, and brownish or yellow stains. Concentrated solutions may cause second or third degree burns with severe necrosis. Prolonged and repeated exposure to dilute solutions may cause irritation, redness, pain and drying and cracking of the skin.

Inhalation: Causes respiratory irritation and at high concentrations may cause severe injury, burns, or death. Effects of exposure may be delayed.

Ingestion: Causes severe irritation or burns of the mouth, throat, and esophagus.

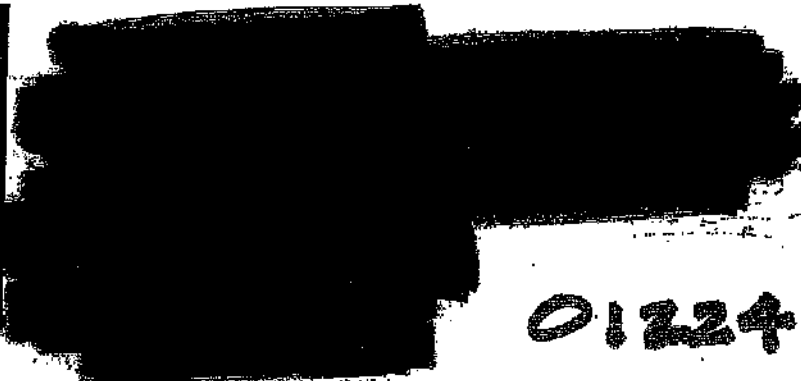
Existing Medical Conditions Possibly Aggravated By Exposure: Skin irritation may be aggravated in individuals with existing skin lesions. Breathing of vapors or sprays (mists) may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis.

Chronic Effects: Repeated exposure may produce erosion and discoloration of teeth.

Carcinogenicity: The International Agency for Research on Cancer (IARC) has concluded that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to man, causing cancer of the larynx (the voice box) and, to a lesser extent, the lung. Although no direct link has been established between exposure to sulfuric acid itself, and cancer in man, exposure to any mist or aerosol during the use of this product should be avoided and, in any case, keep exposures below the occupational exposure limit for sulfuric acid.

The National Toxicology Program (NTP) does not classify sulfuric acid or strong inorganic acid mists as known (or reasonably anticipated to be) human carcinogens.

acceptable
10.03.17

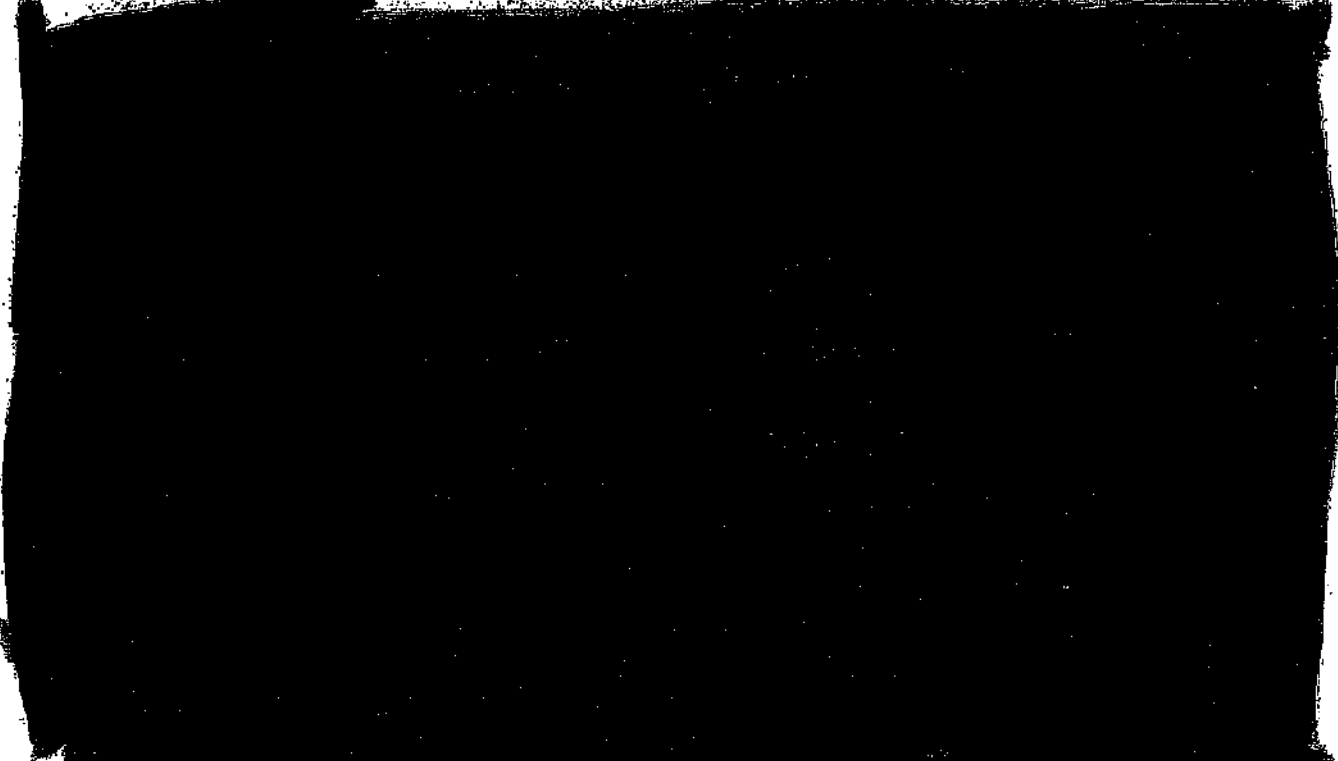


01224

Generator's Waste Profile

Please complete the following:

SECTION 1. GENERAL INFORMATION



SECTION 2. WASTE INFORMATION

Common Name of Waste: 5T - PRE-PRODUCTION WASTE SOLUTION

Process Generating Waste: CLEANING WATER SOLUTION, CONTAINING SULFURIC ACID AND SODIUM HYDROXIDE, FROM PRODUCTION LINE IS TRANSFERRED INTO HOLDING TANKS FOR REMOVAL. SOLUTION IS USED FROM/FOR PRE-PRODUCTION OF STAINLESS STEEL AND CARBON STEEL PARTS. THIS MATERIAL IS FOR CLEANING PURPOSES ONLY AND DOES NOT INVOLVE PLATING.

Waste Volume Produced Annually: 3,000 - 4,000 GALLONS

Shipping Increments: One Time Weekly Monthly Quarterly Yearly Other _____

Check Any Hazardous Characteristics That Apply: Reactive Corrosive Toxic Flammable Listed

SECTION 3. USED / WASTE OIL

Does your waste stream contain 10% or more oil? Yes No ✓



Is this oil considered to be a "used oil" as determined by 40CFR 280.10? Yes No
 (If yes, then please complete used oil certification sheet.)

Attach analytical and check the appropriate box below for any parameters for which your oils have been tested.

PCBs TCLP (Volatiles/Semivolatiles) Total Halogens Total Metals N/A

SECTION 4. PHYSICAL AND CHEMICAL PROPERTIES

Is this waste a non-hazardous liquid industrial waste?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO															
What is the Color?	<input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input checked="" type="checkbox"/> Translucent Tinted Brown															
Describe the Odor.	<input type="checkbox"/> Strong <input type="checkbox"/> Mild <input checked="" type="checkbox"/> None															
Does it Pass Paint Filter Test	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO															
Physical State at 70° F	<input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Slurry <input type="checkbox"/> Other															
Density (weight/volume)	~8.334 LBS./GALLON															
Specific Gravity	~1.0															
pH:	>12.0 < 12.5 ✓															
Flash Point (closed cup)	>200 F															
Viscosity at 70° F	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low															
Percent Composition 95-98% Water NONE% Oil N/A% Rags N/A% Solids																
Solids Composition: NIL	<input type="checkbox"/> Suspended <input type="checkbox"/> Setttable <input type="checkbox"/> Both															
Chemical Composition: List all major constituents, include herbicides, pesticides, carcinogens, pathogens and other hazardous constituents.																
<table border="1"> <thead> <tr> <th>Chemical</th> <th>Minimum</th> <th>Maximum</th> </tr> </thead> <tbody> <tr> <td>TAP WATER</td> <td>90%</td> <td>95%</td> </tr> <tr> <td>SULFURIC ACID</td> <td>4.00%</td> <td>5.0%</td> </tr> <tr> <td>SODIUM HYDROXIDE</td> <td>4.00%</td> <td>5.0%</td> </tr> <tr> <td>-O- VOCs</td> <td>%</td> <td>%</td> </tr> </tbody> </table>	Chemical	Minimum	Maximum	TAP WATER	90%	95%	SULFURIC ACID	4.00%	5.0%	SODIUM HYDROXIDE	4.00%	5.0%	-O- VOCs	%	%	✓ ✓ ✓
Chemical	Minimum	Maximum														
TAP WATER	90%	95%														
SULFURIC ACID	4.00%	5.0%														
SODIUM HYDROXIDE	4.00%	5.0%														
-O- VOCs	%	%														

SECTION 5. TCLP AND TESTING CERTIFICATION

Please check the "YES" column for constituents that have been TCLP tested and attach analytical results to this profile or check the "NO" column verifying the constituent is not present above hazardous levels. All constituents must have either a "YES" or "NO" checked.

Check the method used: Total TCLP EP Toxicity N/A

METALS mg/L (ppm)			
Metal	Level > than	Yes	No
001D Copper	100.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>
003D Zinc	500.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D004 Arsenic	<5.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D005 Barium	<100.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D008 Cadmium	<1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ORGANICS			
Material	Level > than	Yes	No
D018 Benzene	0.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D019 Carbon Tetrachloride	0.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D021 Chlorobenzene	100.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D022 Chloroform	5.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D028 1, 2-Dichloroethane	0.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>

D007 Chromium	<6.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D008 Lead	<6.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D009 Mercury	<0.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D010 Selenium	<1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D011 Silver	<6.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>

D029 1, 1-Dichloroethylene	0.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D035 Methyl Ethyl Ketone	200.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D039 Tetrachloroethylene	0.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D040 Trichloroethylene	0.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D043 Vinyl Chloride	0.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ACID EXTRACTABLES			
Material	Level > than	Yes	No
D023 o-Cresol	200	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D024 m-Cresol	200	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D025 p-Cresol	200	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D028 Cresol	200	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D037 Pentachlorophenol	100	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D041 2, 4, 6-Trichlorophenol	400	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D042 2, 4, 6-Trichlorophenol	2.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

BASE NEUTRAL EXTRACTABLES			
Material	Level > than	Yes	No
D027 1, 4-Dichlorobenzene	7.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D030 2, 4-Dinitrotoluene	0.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D032 Hexachlorobenzene	0.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D033 Hexachlorobutadiene	0.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D034 Hexachloroethane	3.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D035 Nitrobenzene	2.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

HERBICIDES and PESTICIDES			
Material	Level > than	Yes	No
D012 Endrin	0.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D013 Lindane	0.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D014 Methoxychlor	10.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D015 Toxaphene	0.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D016 2, 4-D	10.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D017 2, 4, 5-TP (Silvex)	1.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D020 Chlordane	0.03	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D031 Heptachlor	0.008	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SECTION 6 SHIPPING INFORMATION

Is this waste a D.O.T. Hazardous Material?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
State Waste Codes: N/A (EFFECTIVE 03/16/16 NON-HAZ. WASTE CODES NO LONGER APPLY)	<input type="checkbox"/> 017L - Crankcase Oil <input type="checkbox"/> 019L - Coolants and Water Soluble Oil <input type="checkbox"/> 021L - Other Oil <input checked="" type="checkbox"/> 029L - Other Wastes
Proper Shipping Name:	ACT 461, PART 121, OTHER REGULATED MATERIAL
Method of Shipment:	<input checked="" type="checkbox"/> Bulk <input type="checkbox"/> Drum <input type="checkbox"/> Tote
Additional Handling / Comments:	

Section 7. Conditions of Waste Service

1. Waste Disposal. (hereinafter collectively referred to as "Waste") contained herein and which is accepted as Industrial Waste (hereinafter referred to as "Industrial Waste" or "Waste") delivered by Customer, and which is accepted provided.

2. Waste Accepted at Facility. Generator warrants that the Waste described in the Waste Characterization Profile that is delivered to Company at its Facility hereunder will not contain hazardous, radioactive or toxic wastes as defined by applicable federal, state and/or local laws or regulations. Any waste which does not meet this requirement shall hereinafter be referred to as "Unacceptable Waste." The Generator shall in all matters relating to the collection, transportation and disposal of the Waste hereunder, comply with all applicable federal, state and local laws,

[REDACTED]

Industrial Waste. Generator warrants that the Waste delivered to Company hereunder will not contain any waste that is not specifically described on the Waste Characterization Profile which is incorporated herein and which is subsequently approved by the Company and will meet the material description as set forth in the application and otherwise in all significant respects. The parties may incorporate additional Industrial Waste as part of this Agreement if prior to delivery of such Waste to Company, Customer has provided a Waste Characterization Profile Application for such Waste and Company has approved disposal of such Waste within the limitations and conditions contained in Company's written notice of approval of Industrial Waste disposal.

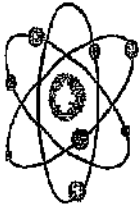
4. Rights of Refusal/Rejection. Company has the right to refuse or reject after acceptance any load of wastes delivered to the facility if the waste is determined to be "Unacceptable Waste". If Customer delivers "Unacceptable Waste", Company may either remove and dispose of that waste at a location agreed to by Customer and charge Customer for the costs or require Customer to promptly remove the waste.

5. Miscellaneous. Service Provider is defined as the ent [REDACTED]

SECTION 8: GENERATOR CERTIFICATION and WASTE SERVICE AGREEMENT

On information and belief based on reasonable inquiry (including generator knowledge and/or analytical testing) I certify that I am authorized to sign below and all information is complete, factual (including attached information), is an accurate representation of the known and suspected hazards and of waste generator regulations pertaining to the waste described herein and agree to the conditions of waste service in Section [REDACTED]

[REDACTED]



Midwest Analytical Services, Inc.

"Where industry comes for answers."

2905 Hilton Rd
Ferndale, MI 48220

All test reports include a chain of custody and a cover sheet.

Phone: (248) 591-6660
MI Only: (888) 801-4MAS
Fax No: (248) 591-6668

Date:

Client:

Order ID:

MAS S#:

Project:

Sample:

The above mentioned project has been completed in accordance with the Quality Assurance Project Plan written by Midwest Analytical Services, Inc., using SW-846, DEQ, EPA, Standard Methods and ASTM documents as reference guidelines. Specific sample information is available upon request. This test report applies only to the samples received as stated on the Chain of Custody (COC).

Test reports are not complete unless accompanied by the COC and this cover sheet. MAS is not responsible for interpretation of this test report. Please read the following numbered comments carefully.

For your convenience the following legend applies to all the following data sheets:

1. Reports shall not be reproduced, except in full, without written approval of MAS.
2. N/D=Not detected.
3. Results relate only to the items tested.
4. ppm=parts per million, mg/l, mg/kg or mg/kg(dry weight)
ppb=parts per billion, ug/l, ug/kg or ug/kg (dry weight)
5. QC Information on file.
6. EQL=Estimated Quantitation Limit.
7. N/A=Not Applicable, Not Available.
8. Materials listed on the COC were analyzed as requested. See COC for details.
9. Data along with qualifiers make this a useable data set.

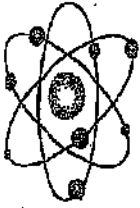
Additional comments and explanations:

No additional comments

If you have any questions regarding this project feel free to contact me at (248) 591-6660 or (888) 801-4827.

Maria Vojnovic

Maria Vojnovic
Lab Manager



Midwest Analytical Services, Inc.

"Where industry comes for answers."

2905 Hilton Rd
Farmdale, MI 48220

All test reports include a chain of custody and a cover sheet.

Phone: (248) 591-6660
MI Only: (888) 801-4MAS
Fax No: (248) 591-6668

Project Name:

Sample Identif:

Physical D:

Sample Date:

Method Number	Parameter	Result	Units	EQL	Analyst	Date Analyzed	Data Flag
SW 846 9040C	pH	12.47	units	2.0	DC	9/21/2017	
SW 846 1010	Ignitability	>200	°F	75	DB	9/12/2017	
SW 846 7.3.3.2	Cyanide-Reactive	N/D	mg/kg	20	DC	9/12/2017	
SW 846 7.3.4.2	Sulfide-Reactive	N/D	mg/kg	20	DC	9/12/2017	
	TCLP Metals:						
SW 846 6010B	Arsenic	N/D	mg/L	0.50	MV	9/14/2017	
SW 846 6010B	Barium	N/D	mg/L	0.35	MV	9/14/2017	
SW 846 6010B	Cadmium	N/D	mg/L	0.25	MV	9/14/2017	
SW 846 6010B	Chromium	N/D	mg/L	0.50	MV	9/14/2017	
SW 846 6010B	Copper	N/D	mg/L	0.25	MV	9/14/2017	
SW 846 6010B	Lead	N/D	mg/L	0.25	MV	9/14/2017	
SW 846 7470A	Mercury	N/D	mg/L	0.002	MV	9/14/2017	
SW 846 6010B	Selenium	0.34	mg/L	0.25	MV	9/14/2017	
SW 846 6010B	Silver	N/D	mg/L	0.25	MV	9/14/2017	
SW 846 6010B	Zinc	N/D	mg/L	0.50	MV	9/14/2017	

pH measured at 25° C

Maria Vojnovic

Maria Vojnovic

Lab Manager



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Electroless Nickel Solution - Neutral pH

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

TSF accumulation of spent solution from plating on plastics operation.

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste

2. Regulated by TSCA? Yes No (PCBs, etc.)

3. List ALL Applicable Waste Codes: D007

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other green	Suspended Solids <input checked="" type="checkbox"/> 0-1 % <input type="checkbox"/> 3-5 % <input type="checkbox"/> 1-3 % <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other _____	acceptable 10/30/17
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pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: <73°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOC CONCENTRATION - 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT ≥ 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
Electroless nickel solution	99	100			%
Chromium	0.01	1.0			%
					%
					%

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup

Lab Analysis Generator Knowledge TCLP TOTAL

	Not Present	Concentration		Not Present	Concentration				
PCB	<input type="checkbox"/>	0 ppm	Aromatic Amine	<input type="checkbox"/>	0 ppm	Arsenic (As)	D004	<input type="checkbox"/>	< 5 ppm
Dioxins	<input type="checkbox"/>	0 ppm	Pesticides	<input type="checkbox"/>	0 ppm	Barium (Ba)	D005	<input type="checkbox"/>	< 100 ppm
Cyanides Reactive	<input type="checkbox"/>	0 ppm	Rodenticides	<input type="checkbox"/>	0 ppm	Cadmium (Cd)	D006	<input type="checkbox"/>	< 1 ppm
Cyanides Total	<input type="checkbox"/>	0 ppm	Fungicides	<input type="checkbox"/>	0 ppm	Chromium (Cr)	D007	<input checked="" type="checkbox"/>	< 5 ppm
Sulfides Reactive	<input type="checkbox"/>	0 ppm				Lead (Pb)	D008	<input type="checkbox"/>	< 5 ppm
Sulfides Total	<input type="checkbox"/>	0 ppm				Mercury (Hg)	D009	<input type="checkbox"/>	< 0.2 ppm
						Selenium (Se)	D010	<input type="checkbox"/>	< 1 ppm
						Silver (Ag)	D011	<input type="checkbox"/>	< 5 ppm

11.0 ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive
- Water Reactive
- Oxidizer
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- NIOSH Human-Positive Carcinogens
- NESHAP Wastes (Benzene, etc.)
- Biological
- None Apply

SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds: D007, 10 lbs
- DOT Shipping Name: Hazardous waste liquid, n.o.s. (chromium) Hazard Class: 9 UN/NA: NA3062
- PG: III ERG: 171 Hazardous Constituents for "n.o.s.": chromium
- Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Totes
- Number of Units to Ship Now: 3000 gallons 6. Anticipated Volume / Units per Year: As needed or One Time
- Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sampling and analysis performed by the generator.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS:

the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact Environmental Geo-Technologies at (313) 486-1000.

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

28470 Ctr'n Dr, Romulus, MI 48174. Telephone 784 946 1000. Fax 734 946 1002

Generator Waste Profile

Profile # **01226**



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Hydrofluoric Acid Solution

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

TSE accumulation of discarding of spent hydrofluoric acid solution used in the chemical milling of titanium castings.

5

USEPA / STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PCBs, etc.)
- List ALL Applicable Waste Codes: D002 D006 D007 D009 D010

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <u>varies</u>	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> > 6%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other _____	<i>acceptable</i> <i>10.06.17</i>
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pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: <73°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOC CONCENTRATION - 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
Water	90	98			
Hydrofluoric acid	5	10			
Dissolved sludge	0	5			

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge-provide backup

<input type="checkbox"/> Lab Analysis		<input checked="" type="checkbox"/> Generator Knowledge		<input checked="" type="checkbox"/> TCLP	<input type="checkbox"/> TOTAL		
	Not Present	Concentration		Not Present	Concentration		
PCB	<input type="checkbox"/>	0 ppm	Aromatic Amine	<input type="checkbox"/>	0 ppm	Arsenic (As)	D004 <input type="checkbox"/> < 6 ppm
Dioxins	<input type="checkbox"/>	0 ppm	Pesticides	<input type="checkbox"/>	0 ppm	Barium (Ba)	D005 <input type="checkbox"/> < 100 ppm
Cyanides Reactive	<input type="checkbox"/>	0 ppm	Rodenticides	<input type="checkbox"/>	0 ppm	Cadmium (Cd)	D008 <input checked="" type="checkbox"/> < 1 ppm
Cyanides Total	<input type="checkbox"/>	0 ppm	Fungicides	<input type="checkbox"/>	0 ppm	Chromium (Cr)	D007 <input checked="" type="checkbox"/> < 5 ppm
Sulfides Reactive	<input type="checkbox"/>	0 ppm				Lead (Pb)	D006 <input type="checkbox"/> < 5 ppm
Sulfides Total	<input type="checkbox"/>	0 ppm				Mercury (Hg)	D009 <input checked="" type="checkbox"/> < 0.2 ppm
						Selenium (Se)	D010 <input checked="" type="checkbox"/> < 1 ppm
						Silver (Ag)	D011 <input type="checkbox"/> < 6 ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive
 Water Reactive
 Oxidizer
 Shock Sensitive
 Reactive (other)
 DOT Explosives
 NIOSH Human-Positive Carcinogens
 NESHAP Wastes (Benzene, etc.)
 Biological
 None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name Waste hydrofluoric acid, (with not more than 60 percentage strength) Hazard Class 8 UN/NA UN1780
- PG II ERG 157 Hazardous Constituents for "n.o.s." _____
4. Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Totes
5. Number of Units to Ship Now: 3000 gallons 6. Anticipated Volume / Units per Year: 12 or One Time
6. Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory requirements.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-quart sample of the waste described in the above referenced GENERATOR'S WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

7170

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Clirn Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile
Profile 21227



Name of Waste/Common Chemical Name:

Alodine 5200 Make Up

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

Expired Acid

USEPA / STATE WASTE IDENTIFICATION

- 1. This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- 2. Regulated by TSCA? Yes No (PCBs, etc.)
- 3. List ALL Applicable Waste Codes: D002

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <u>Orange</u>	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other <u>1.03</u>	<u>acceptable</u> <u>10/24/17</u>
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pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: <73°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOC CONCENTRATION - 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

See Attached SDS

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
<u>Water</u>	<u>98.85</u>	<u>0</u>			
<u>Substituted polyhydrazine acetate</u>	<u>5</u>	<u>1</u>			
<u>Component</u>					
<u>1-Propargyl-2-Propargyl</u>	<u>5</u>	<u>1</u>			
<u>Fluorotitanic Acid</u>	<u>5</u>	<u>0</u>			

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup
 Lab Analysis Generator Knowledge TCLP TOTAL

	Not Present	Concentration		Not Present	Concentration				
PCB	<input type="checkbox"/>	ppm	Aromatic Amines	<input type="checkbox"/>	ppm	Arsenic (As)	D004	<input type="checkbox"/>	< 5 ppm
Dioxins	<input type="checkbox"/>	ppm	Pesticides	<input type="checkbox"/>	ppm	Barium (Ba)	D005	<input type="checkbox"/>	< 100 ppm
Cyanides Reactive	<input type="checkbox"/>	ppm	Acenitricides	<input type="checkbox"/>	ppm	Cadmium (Cd)	D009	<input type="checkbox"/>	< 1 ppm
Cyanides Total	<input type="checkbox"/>	ppm	Fungicides	<input type="checkbox"/>	ppm	Chromium (Cr)	D007	<input type="checkbox"/>	< 5 ppm
Sulfides Reactive	<input type="checkbox"/>	ppm				Lead (Pb)	D008	<input type="checkbox"/>	< 5 ppm
Sulfides Total	<input type="checkbox"/>	ppm				Mercury (Hg)	D009	<input type="checkbox"/>	< 0.2 ppm
						Selenium (Se)	D010	<input type="checkbox"/>	< 1 ppm
						Silver (Ag)	D011	<input type="checkbox"/>	< 5 ppm

TCLP Organics DM2 - DM5 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive
- Water Reactive
- Oxidizer
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- NIOSH Human-Positive Carcinogens
- NESHAP Wastes (Benzene, etc.)
- Biological
- None Apply

SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds _____
- DOT Shipping Name: UN 3267, Waste Corrosive Liquid, Acidic, inorganic, N.O.S. (Fluoro-titanic Acid) Hazard Class 8 UN 3267
- PG III ERG 154 Hazardous Constituents for "n.o.s." Fluoro-titanic Acid
- Method of Shipment: Bulk Tanker Van truck Rail Car Drums Totes
- Number of Units to Ship Now: 3 DR 8. Anticipated Volume / Units per Year: Varies or One Time
- Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results

the waste described in the above referenced GENERATORS WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies



Revision Number: 005.7

Issue date: 06/20/2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: BONDERITE M-NT 5200 MU AERO CONVERSION COATING known as ALODINE 5200 MAKEUP **IDH number:** 594142

Product type: Conversion coating **Region:** United States

Restriction of Use: None identified **Contact information:**

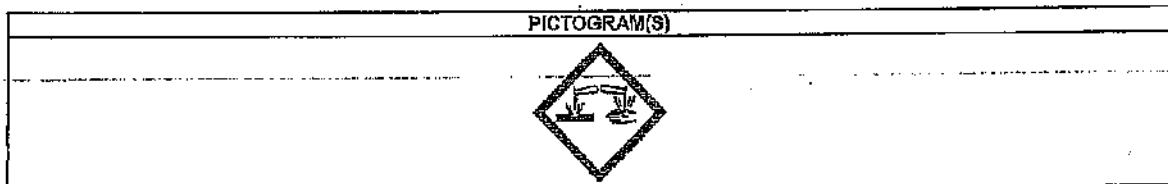
Company address: Henkel Corporation Telephone: (860) 671-6100
 One Henkel Way MEDICAL EMERGENCY Phone: Poison Control Center
 Rocky Hill, Connecticut 06067 1-877-671-4808 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

HAZARD CLASS	HAZARD CATEGORY
SKIN CORROSION	1C
SERIOUS EYE DAMAGE	1



Precautionary Statements

Prevention: Wash affected area thoroughly after handling. Wear protective gloves, clothing, eye and face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash contaminated clothing before reuse.

Storage: Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
------------------------	------------	-------------

IDH number: 594142

Product name: BONDERITE M-NT 5200 MU AERO CONVERSION COATING known as ALODINE 5200 MAKEUP

Substituted polyhydroxy aromatic compound	Proprietary	1 - 5
1-Propoxy-2-propanol	1569-01-3	1 - 5

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.
Skin contact:	Rinse with large amounts of running water. For large burns (greater than 25 square inches), continually massage 2.5% calcium gluconate gel into the burn area until the pain is relieved. Discard any shoes or clothing items that cannot be decontaminated.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Seek medical advice. Do not induce vomiting. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Symptoms:	See Section 11.
Notes to physician:	Treatment of hypocalcemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesemia may be corrected by intravenous magnesium sulfate.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Formation of toxic gases is possible during heating or in fires.
Hazardous combustion products:	Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. For industrial use only. Do not take internally.

Storage: For safe storage, store between 40 °F (4.4 °C) and 100 °F (37.8 °C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Protect from freezing.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEL	OTHER
Substituted polyhydroxy aromatic compound	None	None	None	None
1-Propoxy-2-propanol	None	None	None	None

Engineering controls: Ventilation should effectively remove and prevent buildup of any vapor/mist/fume/dust generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Wear impervious gloves for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Orange
Odor:	Mild
Odor threshold:	Not available.
pH:	1.3
Vapor pressure:	18 mm hg (20 °C (68°F))
Boiling point/range:	> 100 °C (> 212°F)
Melting point/range:	Not available.
Specific gravity:	1.01 - 1.03
Vapor density:	Not determined
Flash point:	93.4 °C (200.12 °F) Tagliabue closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	Not applicable
Evaporation rate:	Not available.
Solubility in water:	Complete
Partition coefficient (n-octanol/water):	Not determined
VOC content:	1.7 %
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: Will not occur.

Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. May liberate hydrogen fluoride.

Incompatible materials: Not available.

Reactivity: This product may react with strong alkalis. This material will react with glass, concrete, certain metals, silica containing materials, rubber, leather, and many organics.

Conditions to avoid: Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Inhalation of mists or vapors may produce upper airway edema, wheezing, pulmonary edema, pneumonitis and respiratory failure.

Skin contact: Liquid or vapor can cause fluoride-type irritation or burns which may not be immediately painful or visible. Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion: This product may produce corrosive damage to the gastrointestinal tract if it is swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Substituted polyhydroxy aromatic compound	None	No Data
1-Propoxy-2-propanol	Oral LD50 (Rat) = 2.8 g/kg Dermal LD50 (Rabbit) = 3.55 g/kg	Central nervous system, Eyes, Irritant, Kidney

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Substituted polyhydroxy aromatic compound	No	No	No
1-Propoxy-2-propanol	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

15. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Hazardous waste number: This product, if discarded directly, would be a characteristic RCRA corrosive waste (D002).

16. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (Fluorotitanic acid)
Hazard class or division: 8
Identification number: UN 3284
Packing group: III

International Air Transportation (ICAO/IATA)

Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (Fluorotitanic acid)
Hazard class or division: 8
Identification number: UN 3284
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Fluorotitanic acid)
Hazard class or division: 8
Identification number: UN 3284
Packing group: III

17. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis.

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health; Delayed Health
CERCLA/SARA Section 313: None above reporting de minimis.

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPADSL/NDSL Status: One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.

18. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: Reviewed SDS. Reissued with new data.

Prepared by: Regulatory Affairs
Issue date: 06/20/2017

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.



WASTE INFORMATION

Name of Waste/Common Chemical Name:
WATER AND PENETRANT

Process Generating Waste (Please be specific, incomplete information may delay the approval process):
WASTE WATER FROM MANUFACTURING PROCESSING

USEPA / STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PCBs, etc.)
- List ALL Applicable Waste Codes: NONE

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <u>GREEN</u>	Suspended Solids: <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> >5%	Layers: <input type="checkbox"/> Multi-Layered <input checked="" type="checkbox"/> Bi-Layered <input type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.8-1.4 Exact / Other _____	acc. file 10.13.17
---	--	---	---	-----------------------

pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: <73°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOC CONCENTRATION - NONE ppm (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
<u>WATER</u>	<u>96</u>	<u>99</u>			
<u>SEE ADDENDUM</u>					

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup

<input checked="" type="checkbox"/> Lab Analysis	<input type="checkbox"/> Generator Knowledge	<input checked="" type="checkbox"/> TCLP	<input type="checkbox"/> TOTAL				
	Not Present	Concentration	Not Present	Concentration			
PCB	<input checked="" type="checkbox"/>	ppm	Aromatic Amine	<input checked="" type="checkbox"/>	ppm	Arsenic (As)	D004 <input checked="" type="checkbox"/> < 5 ppm
Dioxins	<input checked="" type="checkbox"/>	ppm	Pesticides	<input checked="" type="checkbox"/>	ppm	Barium (Ba)	D015 <input checked="" type="checkbox"/> < 100 ppm
Cyanides Reactive	<input checked="" type="checkbox"/>	ppm	Rodenticides	<input checked="" type="checkbox"/>	ppm	Cadmium (Cd)	D008 <input checked="" type="checkbox"/> < 1 ppm
Cyanides Total	<input checked="" type="checkbox"/>	ppm	Fungicides	<input checked="" type="checkbox"/>	ppm	Chromium (Cr)	D007 <input checked="" type="checkbox"/> < 5 ppm
Sulfides Reactive	<input checked="" type="checkbox"/>	ppm				Lead (Pb)	D006 <input checked="" type="checkbox"/> < 5 ppm
Sulfides Total	<input checked="" type="checkbox"/>	ppm				Mercury (Hg)	D009 <input checked="" type="checkbox"/> < 0.2 ppm
						Selenium (Se)	D010 <input checked="" type="checkbox"/> < 1 ppm
						Silver (Ag)	D011 <input checked="" type="checkbox"/> < 5 ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive
- Water Reactive
- Oxidizer
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- NIOSH Human-Possible Carcinogens
- NESHAAP Wastes (Benzene, etc.)
- Biological
- None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name NON PCB/ NON DOT REGULATED MATERIAL Hazard Class _____ UN/NA _____
4. Method of Shipment: Bulk Tanker Van/Truck Rail Car Drums Totes
5. Number of Units to Ship Now: 0
6. Anticipated Volume / Units per Year: 75,000 yds WEEK One Time
6. Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any other _____

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-quart sample of the waste described in the above referenced GENERATOR'S WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies



Date Received: 10/04/17 12:15pm
Date Reported: 10/10/17 4:00pm

Customer Id: Water with Penetrant
Sample Location: Pit

PO #:

Lab#: A171004-1

Description: Bright Yellow Skim
over Light Yellow
Liquid

Page 1 of 3

SW846, Method 1010
Flash Point

>212°F

SW846, Method 9045D
pH (Electrode)(22.2°C)(Direct)

7.61

Cyanide (Spot Test)
Sulfide (Spot Test)

Negative
Negative

Solids by Centrifuge

0%

% Water (Karl Fischer)

>99%

SW 846, Method 1311/3010A/6010B, Method 1311/7473 (Mercury)

Non-Filterable Solid Content <0.5%

Extraction Date: No Extraction/Filterable Liquid
Date Analyzed: 10/09/17

Starting pH: N/A

Ending pH: N/A

	Reported Results	D List Maximum
TCLP mg/L	TCLP mg/L	TCLP mg/L
TCLP Extraction		
Arsenic	<0.05	5.0
Barium	<0.05	100.0
Cadmium	<0.01	1.0
Chromium	<0.05	5.0
Lead	<0.05	5.0
Mercury	<0.02	0.2
Selenium	<0.05	1.0
Silver	<0.01	5.0

The foregoing is limited to findings based upon material received for analysis and/or information furnished by client. Samples received will be discarded after 30 days. Re-evaluation will be free of charge only if discrepancies exist. Reproduction of this report for other than clients internal use is prohibited without written consent.

Date Received: 10/04/17 12:15pm
 Date Reported: 10/10/17 4:00pm
 Customer Id: Water with Penetrant
 PO #:
 Lab#: A171004-1

Page 2 of 3

Method 8270, SW 846

The following TCLP Semi-Volatiles were determined by GC/FID and/or GC/MS.

Compound:	Reported Results TCLP mg/L	D List Maximum TCLP mg/L
o-Cresol	<0.03	200.0
m-Cresol, p-Cresol	<0.03	200.0
1,4 Dichlorobenzene	<0.03	7.5
2,4 Dinitrotoluene	*	0.13
Hexachlorobenzene	*	0.13
Hexachlorobutadiene	*	0.5
Hexachloroethane	*	3.0
Nitrobenzene	<0.03	2.0
Pentachlorophenol	<0.03	100.0
Pyridine	<0.03	5.0
2,4,5 Trichlorophenol	*	400.0
2,4,6 Trichlorophenol	*	2.0

Recovery Of Surrogates	%	Acceptable Range
p-Terphenyl-d ₁₄	21.4	18 - 137%
Phenol-d ₆	*16.4	28 - 113%
Nitrobenzene-d ₅	76.0	23 - 120%
2 Fluorobiphenyl	*	30 - 115%
2 Fluorophenol	57.9	25 - 121%
2,4,6 Tribromophenol	*	19 - 122%

*Note: Inability to quantitate compounds/surrogates and surrogate out of range due to matrix interference.



Date Received: 10/04/17 12:15pm
 Date Reported: 10/10/17 4:00pm
 Customer Id: Water with Penstrant
 PO #:
 Lab#: A171004-1

Page 3 of 3

Method 5021/8260, SW 846

The following Volatiles were determined by TCLP/ZHB and or Total as received:

Compound:	Reported *Results TCLP mg/L	D List Maximum TCLP mg/L
Benzene	<0.02	0.5
Carbon Tetrachloride	<0.02	0.5
Chlorobenzene	<0.02	100.0
Chloroform	<0.02	6.0
1,2-Dichloroethane	<0.02	0.5
1,1-Dichloroethylene	<0.02	0.7
Methyl Ethyl Ketone	0.03	200.0
Tetrachloroethylene	<0.02	0.7
Trichloroethylene	<0.02	0.5
Vinyl Chloride	<0.02	0.2

Surrogate Spike Recovery Data	%	Acceptable Limits
1,2-Dichloroethane-d ₄	*73.4	80 - 120
Dibromofluoromethane	78.3	76 - 114
Toluene-d ₈	81.6	81 - 117
4-Bromofluorobenzene	*70.7	74 - 121

*Note: Surrogates out of range due to matrix interference.



The foregoing is limited to the data based upon material received for analysis and/or information furnished by client. Samples received will be discarded after 30 days. Re-evaluation will be free of charge only if discrepancies exist. Reproduction of this report for other than client's internal use is prohibited without written consent.

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
 28470 Citrin Dr, Romulus, MI 48174 Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile
 Profile # 012-39



HAZARDOUS WASTE IDENTIFICATION

Name of Waste/Common Chemical Name:

Inorganic Acids etc.

Process Generating Waste (Name of Company; Hospital Registration may apply (if appropriate))

Ballard Gas Works

USEPA/STATE WASTE IDENTIFICATION

1. This waste is considered to be: Non-Hazardous Liquid Industrial Waste Hazardous Waste

2. Registered by RCRA: Yes No (P, H, U)

3. List all Applicable Waste Codes: D002 D004 D005 D006 D007 D008 D009 D010 D011

PHYSICAL CHARACTERISTICS OF WASTE

<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Other	<input type="checkbox"/> 0-1% <input checked="" type="checkbox"/> 1-5% <input type="checkbox"/> 5-10% <input type="checkbox"/> 10-20% <input type="checkbox"/> 20-30% <input type="checkbox"/> 30-40% <input type="checkbox"/> 40-50% <input type="checkbox"/> 50-60% <input type="checkbox"/> 60-70% <input type="checkbox"/> 70-80% <input type="checkbox"/> 80-90% <input type="checkbox"/> 90-100%	<input type="checkbox"/> Volatile <input checked="" type="checkbox"/> Non-Volatile <input type="checkbox"/> Insoluble <input type="checkbox"/> Soluble	<input type="checkbox"/> 0-10 <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-30 <input type="checkbox"/> 30-40 <input type="checkbox"/> 40-50 <input type="checkbox"/> 50-60 <input type="checkbox"/> 60-70 <input type="checkbox"/> 70-80 <input type="checkbox"/> 80-90 <input type="checkbox"/> 90-100	<input type="checkbox"/> 0-10 <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-30 <input type="checkbox"/> 30-40 <input type="checkbox"/> 40-50 <input type="checkbox"/> 50-60 <input type="checkbox"/> 60-70 <input type="checkbox"/> 70-80 <input type="checkbox"/> 80-90 <input type="checkbox"/> 90-100	<input checked="" type="checkbox"/> Other
					<input type="checkbox"/> 0-10 <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-30 <input type="checkbox"/> 30-40 <input type="checkbox"/> 40-50 <input type="checkbox"/> 50-60 <input type="checkbox"/> 60-70 <input type="checkbox"/> 70-80 <input type="checkbox"/> 80-90 <input type="checkbox"/> 90-100

acceptable
 10/25/17

4. 0-10 10-20 20-30 30-40 40-50 50-60 60-70 70-80 80-90 90-100

Hazardous Waste Code: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

RCRA Reporting Code: 0

TOTAL QUANTITY OF WASTE

CONSTITUENT	MAX. AMT.	MIN. AMT.	CONCENTRATION	MAX. AMT.
<u>Inorganic Acids</u>	<u>25</u>	<u>0</u>	<u>Poly Aluminum Sulfate</u>	<u>50</u>
<u>Other</u>	<u>50</u>	<u>0</u>		
<u>Other</u>	<u>50</u>	<u>0</u>		
<u>Other</u>	<u>50</u>	<u>0</u>		

see attached

Metals: Indicate if this waste contains any of the following metals. If generator has analytical results

Metals	Net Concentration		Net Concentration		Asbestos/Lead	Zinc	Cadmium	Chromium (VI)	Lead (Pb)	Mercury (Hg)	Selenium (Se)	Silver (Ag)
	Percent	ppm	Percent	ppm								
Asbestos	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Lead	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Zinc	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Cadmium	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Chromium (VI)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Lead (Pb)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Mercury (Hg)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Selenium (Se)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							
Silver (Ag)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>							

TCLP Analytical Data - None above regulatory limits; Present: Not Present:

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked

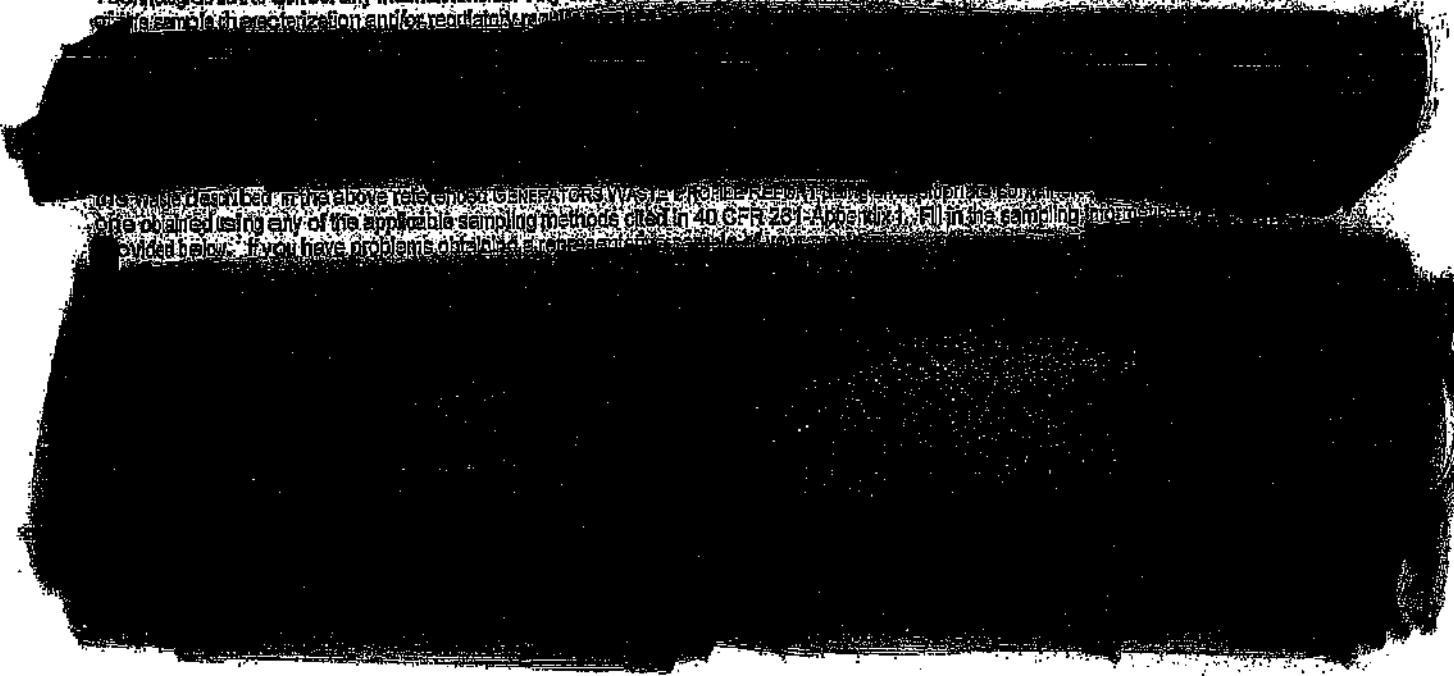
- Explosive
- Water Reactive
- Corrosive
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- Other Hazardous Properties (Acid, etc.)
- Toxic Wastes (Benzene, etc.)
- Biological
- None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49 CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds _____
3. DOT shipping Name, Waste Description, Hazard, and/or UN3077, use Hazard Class # UN3077
4. Method of shipment: Bulk Tanker Van/Truck Mail Bag Other Other
5. Number of Units to Ship 200, 000 Units per Year 200, 000 or One Time
6. Special Handling Requirements including PPE _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of this sample characterization and/or reanalysis.



Potential Mixed Acids

Sulfuric

Hydrochloric

Phosphoric

Chromic

Nitric

Phosphorous

Acetic

Sulfurous

Boric

Carbonic

Arsenic

Perchloric

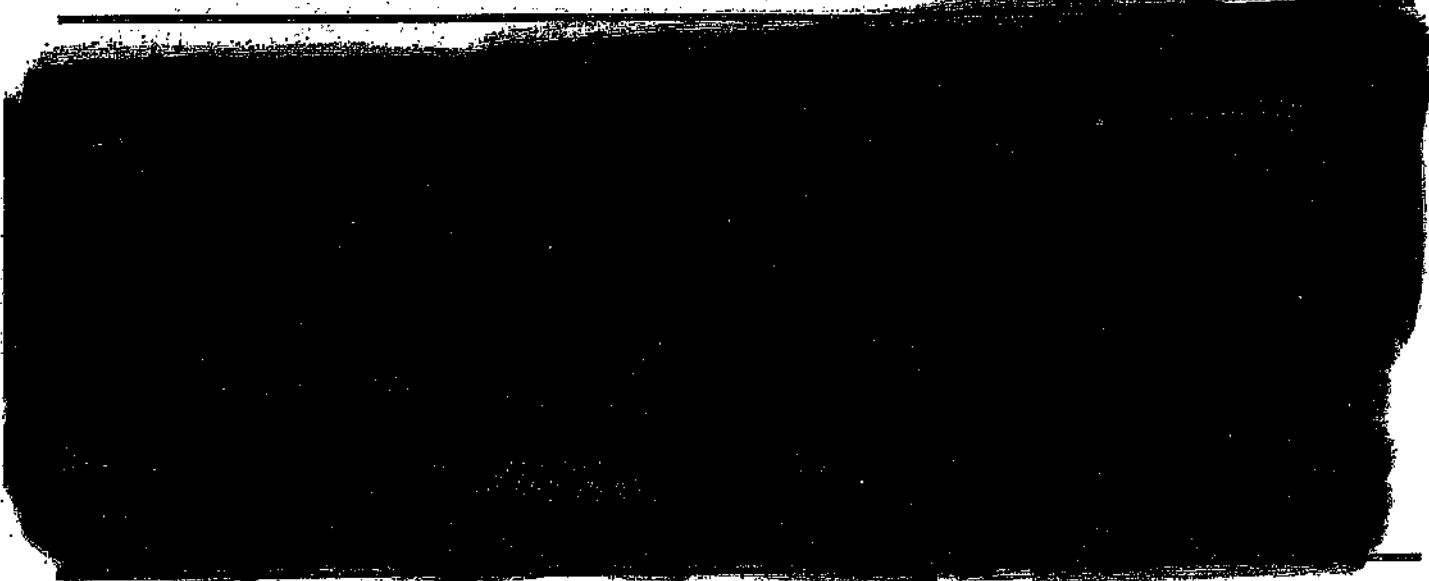
Hydrofluoric

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

28470 Citrin Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile

Profile # **91242**



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Plating Operation

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

From zinc + plating pans

USEPA / STATE WASTE IDENTIFICATION

- 1. This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- 2. Regulated by TSCA? Yes No (PCBs, etc.)
- 3. List ALL Applicable Waste Codes: D002 D007

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input checked="" type="checkbox"/> Black/Brown <input type="checkbox"/> Other	Suspended Solids: <input checked="" type="checkbox"/> 0-1 % <input type="checkbox"/> 3-5 % <input type="checkbox"/> 1-3 % <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other <u>1.06</u>	<i>acceptable</i> <i>10.31.17</i>
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pH: NA ≤ 2 2-4 4-8 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: <73°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOC CONCENTRATION - — 0 — PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
<u>Sodium Hydroxide</u>	<u>20</u>	<u>1</u>			
<u>Water</u>	<u>98</u>	<u>55</u>			
<u>Solids</u>	<u>25</u>	<u>1</u>			

Metals: Indicate if this waste contains any of the following metals. If Generator knowledge provide backup

<input type="checkbox"/> Lab Analysis		<input checked="" type="checkbox"/> Generator Knowledge		<input type="checkbox"/> TCLP		<input checked="" type="checkbox"/> TOTAL	
	Not Present	Concentration		Not Present	Concentration		
PCB	<input type="checkbox"/>	_____ ppm	Aromatic Amine	<input type="checkbox"/>	_____ ppm	Arsenic (As)	D004 <input type="checkbox"/> < 5 ppm _____ ppm
Dioxins	<input type="checkbox"/>	_____ ppm	Pesticides	<input type="checkbox"/>	_____ ppm	Barium (Ba)	D005 <input type="checkbox"/> < 100 ppm _____ ppm
Cyanides Reactive	<input type="checkbox"/>	_____ ppm	Rodenticides	<input type="checkbox"/>	_____ ppm	Cadmium (Cd)	D006 <input type="checkbox"/> < 1 ppm _____ ppm
Cyanides Total	<input type="checkbox"/>	_____ ppm	Fungicides	<input type="checkbox"/>	_____ ppm	Chromium (Cr)	D007 <input type="checkbox"/> < 5 ppm _____ ppm
Sulfides Reactive	<input type="checkbox"/>	_____ ppm				Lead (Pb)	D008 <input type="checkbox"/> < 5 ppm _____ ppm
Sulfides Total	<input type="checkbox"/>	_____ ppm				Mercury (Hg)	D009 <input type="checkbox"/> < 0.2 ppm _____ ppm
						Selenium (Se)	D010 <input type="checkbox"/> < 1 ppm _____ ppm
						Silver (Ag)	D011 <input type="checkbox"/> < 5 ppm _____ ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING? At Least One Box Must Be Checked.

- Radioactive
 Water Reactive
 Oxidizer
 Shock Sensitive
 Reactive (other)
 DOT Explosives
 NIOSH Human-Positive Carcinogens
 NESHAP Wastes (Benzene, etc.)
 Biological
 None Apply

SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds _____
- DOT Shipping Name UN3266, Waste Corrosive Liquid, basic, inorganic, n.o.s. (Sodium Hydroxide), 8, I Hazard Class 8 UN3266
- PG I ERG 154 Hazardous Constituents for "n.o.s." Sodium Hydroxide
- Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Totes
- Number of Units to Ship Now: 3,000 GAL 8. Anticipated Volume / Units per Year: _____ or One Time
- Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked I request Environmental Geo-Technologies not to share this information with the results.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: PLEASE collect a representative 1-quart sample of the waste described in the above referenced GENERATOR'S WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 49 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample, please contact your Environmental Geo-Technologies.

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	10 / 30 / 17
Receiving ID#	
Manifest#	Line:
Land Ben Cart Included	Yes No
[REDACTED]	
Client	
Transporter	KED West
Time In	
Time out	
Received by	
Sampled by	

Compatible? (RT#)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Barium	
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium	
TOC (ppm)(CC Waste Only)?	N/A	Total Iron	
Flash Point (°F)	>1400F	Magnesium	
pH (S.U.)	13.0	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.06	TDS	
Physical Description	liquid	Resistivity	
Stream Consistency	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sulfate	
Oil in Sample	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Temperature	70°F		
Conductivity	0.2 mS		
% Solids	24%		
Turbidity	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Color (visual)	amber		
TSS (%)	<170		
Radiation Screen (as needed)	negative		
Lab Signature	[Signature]		



WASTE INFORMATION

Name of Waste/Common Chemical Name:

NITRIC ACID

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

TEDE CONSOLIDATION

USEPA/STATE WASTE IDENTIFICATION

1. This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste

2. Regulated by TSCA? Yes No (PCBs, etc.)

3. List ALL Applicable Waste Codes: D002, D004, D005, D006, D007, D008, D009, 2010, 2011

PHYSICAL CHARACTERISTICS OF WASTE

Color <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <u>VARIABLES</u>	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input checked="" type="checkbox"/> 3-5% <input checked="" type="checkbox"/> 1-3% <input type="checkbox"/> >5%	Layers <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input checked="" type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Excl./Other _____	acceptable 10/27/17
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pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥ 12.5

Liquid Flash Point: <73°F 73-100°F 101-140°F 141-200°F >200°F None Closed Cup Open Cup

VOC CONCENTRATION - 0 ppm (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
<u>NITRIC ACID</u>	<u>1</u>	<u>39</u>	<u>WATER</u>	<u>61</u>	<u>99</u>
<u>HYDROGEN FLUORIDE</u>	<u>0</u>	<u>10</u>			
<u>AMMONIUM NITRATE</u>	<u>0</u>	<u>10</u>			
<u>AMMONIUM NITRATE</u>	<u>0</u>	<u>10</u>			
<u>FERRIC FLUORIDE</u>	<u>0</u>	<u>3</u>			

Metals: Indicate if this waste contains any of the following metals. If Generator Knowledge provides backup

<input type="checkbox"/> Lab Analysis	<input checked="" type="checkbox"/> Generator Knowledge	<input type="checkbox"/> TCLP	<input checked="" type="checkbox"/> TOTAL
---------------------------------------	---	-------------------------------	---

Not Present		Concentration	Not Present		Concentration	Element (Ab)	Code	Limit	Actual	Unit
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Arsenic (As)	D004	< 5	5	ppm
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Barium (Ba)	D008	< 100	> 100	ppm
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Cadmium (Cd)	D006	< 1	> 1	ppm
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Chromium (Cr)	D007	< 5	> 5	ppm
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Lead (Pb)	D008	< 5	> 5	ppm
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Mercury (Hg)	D009	< 0.2	> 0.2	ppm
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Selenium (Se)	D010	< 1	> 1	ppm
<input type="checkbox"/>	<input type="checkbox"/>	ppm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ppm	Silver (Ag)	D011	< 5	> 5	ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive
- Water Reactive
- Oxidizer
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- NIOSH Human-Possible Carcinogens
- NESHAP Wastes (Benzene, etc.)
- Biological
- None Apply

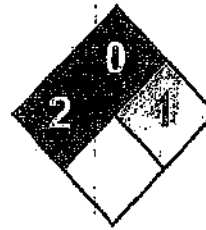
SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No NPS
- Reportable Quantity (RQ) in pounds _____
- DOT Shipping Name WASTE CORROSIVE LIQUID Hazard Class 8 UNNA UN326
- Method of Shipment: Bulk Tanker Van truck Rail Car Drums Pails
- Number of Units to Ship Now: 5,000 gal 6. Anticipated Volume / Units per Year: 60,000 gal or One Time
- Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked , I request Environmental Geo-Technologies

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative, quart sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261.11 Appendix 1. Fill in the sampling information in the spaces provided below. If you have any questions, please contact Environmental Geo-Technologies.



Health	2
Life	0
Reactivity	1
Personal Protection	E

Material Safety Data Sheet

Sodium carbonate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sodium carbonate

Catalog Codes: SLS3481, SLS1264, SLS4105, SLS1894, SLS3316

CAS#: 497-19-8

RTECS: VZ4050000

TSCA: TSCA 8(b) Inventory: Sodium carbonate

Cl#: Not available.

Synonym: Crystal Carbonate, Disodium Carbonate, Sal Soda, Soda Asha, Washing Soda

Chemical Name: Sodium Carbonate, Anhydrous

Chemical Formula: Na₂-C-03

Contact Information:

ScienceLab.com, Inc.

14025 Smith Rd.

Houston, Texas 77398

US Sales: 1-800-801-7247

International Sales: 1-281-441-4400

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone) call:
1-800-424-9300

International CHEMTREC call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sodium carbonate	497-19-8	100

Toxicological Data on Ingredients: Sodium carbonate: ORAL (LD50): Acute: 4090 mg/kg [Rat], 6600 mg/kg [Mouse]. DUST (LC50): Acute: 2300 mg/m² hours [Rat], 1200 mg/m² hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Potential Chronic Health Effects:

Slightly hazardous in case of skin contact (sensitizer). **CARCINOGENIC EFFECTS:** Not available. **MUTAGENIC EFFECTS:** Not available. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Not available. The substance may be toxic to upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Emits Na₂O fumes when heated to decomposition.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:

Sodium carbonate can ignite and burn fiercely in contact with fluoride. Sodium Carbonate in contact with fluorine decomposed at ordinary temperature with incandescence.

Special Remarks on Explosion Hazards:

Reacts explosively with red-hot aluminum metal. Sodium carbonate + ammonia in arabic gum solution will explode.

Section 6: Accidental Release Measures**Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:

Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids.

Storage:

Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 21°C (75.2°F).
Hygroscopic

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Solid powder.)

Odor: Odorless

Taste: Alkaline.

Molecular Weight: 105.99 g/mole

Color: White.

pH (1% soln/water): 11.5 [Basic.]

Boiling Point: Not available.

Melting Point: 851°C (1563.8°F)

Critical Temperature: Not available.

Specific Gravity: Density: 2.532 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (In Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:

Soluble in hot water, glycerol. Partially soluble in cold water. Insoluble in acetone, alcohol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture

Incompatibility with various substances:

Reactive with acids. Slightly reactive to reactive with moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Hygroscopic. Combines with water with evolution of heat. Incompatible with phosphorus pentoxide, lithium, fluorine, fluoride, ammonia + silver nitrate, 2,4,6-trinitrotoluene, ammonia, acids, sodium sulfide + water, hydrogen peroxide, red hot aluminum metal, sodium sulfide, zinc, calcium hydroxide. Sodium Carbonate is decomposed by acids with effervescence. Reacts violently with F₂, Lithium, and 2,4,6-trinitrotoluene. Sodium begins to decompose at 400 C to evolve CO₂.

Special Remarks on Corrosivity: Hot concentrated solutions of sodium carbonate are mildly corrosive to steel.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation, Ingestion.

Toxicity to Animals:

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 4090 mg/kg [Rat]. Acute toxicity of the dust (LC50): 1200 mg/m³ 2 hours [Mouse].

Chronic Effects on Humans: May cause damage to the following organs: upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans: Hazardous in case of skin contact (Irritant), or ingestion, or inhalation (lung irritant).

Special Remarks on Toxicity to Animals: LDL (Lowest Published Lethal Dose) [Man] - Route: Oral; Dose: 714 mg/kg

Special Remarks on Chronic Effects on Humans: May cause adverse reproductive effects based on animal test data

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes skin irritation with possible burns depending on the concentration, site (abraded or intact skin), and duration of exposure. Eyes: Causes eye irritation and possible burns. Concentrated solutions may cause permanent corneal injury (permanent corneal opacity). Ingestion: Sodium carbonate ingestion may cause irritation of the digestive tract resulting in nausea, vomiting, diarrhea, thirst, abdominal pain depending on concentration and amount ingested. May also affect the cardiovascular system. Inhalation: Dust may cause respiratory tract and mucous membrane irritation with coughing and shortness of breath (dyspnea), pulmonary edema. Chronic Potential Health Effects: Chronic inhalation may result in decreased pulmonary function, nasal congestion, nosebleeds, perforation of the nasal septum. Other effects of chronic exposure are skin (dermatitis and ulceration), and gastrointestinal complaints. However, the effects of chronic exposure seem to be reversible if exposure is decreased.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).
Identification: Not applicable.
Special Provisions for Transport: Not applicable.

Section 16: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Sodium carbonate
Other Regulations: EINECS; This product is on the European Inventory of Existing Commercial Chemical Substances.
Other Classifications:
WHMIS (Canada): CLASS D-2B: Material causing other toxic effects (TOXIC).
DSCI (EEC):
R36/37/38- Irritating to eyes, respiratory system and skin. S22- Do not breathe dust. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
HMS (U.S.A.):
Health Hazard: 2
Fire Hazard: 0
Reactivity: 1
Personal Protection: E
National Fire Protection Association (U.S.A.):
Health: 2
Flammability: 0
Reactivity: 1
Specific hazard:
Protective Equipment:
Gloves, Lab coat, Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

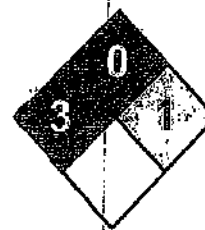
Section 16: Other Information

References: Not available.
Other Special Considerations: Not available.

Created: 10/10/2005 08:28 PM

Last Updated: 05/21/2013 12:00 PM

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Health	3
Env	0
Reactivity	2
Personal Protection	J

Material Safety Data Sheet Sodium hydroxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sodium hydroxide Catalog Codes: SLS3298, SLS1081, SLS2503, SLS3925, SLS1705 CAS#: 1310-73-2 RTECS: WB4900000 TSCA: TSCA 8(b) Inventory: Sodium hydroxide CI#: Not available. Synonym: Caustic Soda Chemical Name: Sodium Hydroxide Chemical Formula: NaOH	Contact Information: Sciencelab.com, Inc. 14025 Smith Rd. Houston, Texas 77396 US Sales: 1-800-901-7247 International Sales: 1-281-441-4400 Order Online: ScienceLab.com CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300 International CHEMTREC, call: 1-703-527-3887 For non-emergency assistance, call: 1-281-441-4400
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Section 2: Composition and Information on Ingredients

Composition:			
Name	CAS #	% by Weight	
Sodium hydroxide	1310-73-2	100	
Toxicological Data on Ingredients: Sodium hydroxide LD50: Not available. LC50: Not available.			

Section 3: Hazards Identification

Potential Acute Health Effects: Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, of inhalation. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastric-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to mucous membranes, upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce focal skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: metals

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat.

Fire Fighting Media and Instructions: Not available

Special Remarks on Fire Hazards:

sodium hydroxide + zinc metal dust causes ignition of the latter. Under proper conditions of temperature, pressure and state of division, it can ignite or react violently with acetaldehyde, allyl alcohol, allyl chloride, benzene-1,4-diol, chlorine trifluoride, 1,2-dichloroethane, nitroethane, nitromethane, nitroparaffins, nitropropane, cinnamaldehyde, 2,2-dichloro-3,3-dimethylbutane. Sodium hydroxide in contact with water may generate enough heat to ignite adjacent combustible materials. Phosphorous boiled with NaOH yields mixed phosphines which may ignite spontaneously in air. sodium hydroxide and cinnamaldehyde + heat may cause ignition. Reaction with certain metals releases flammable and explosive hydrogen gas.

Special Remarks on Explosion Hazards:

Sodium hydroxide reacts to form explosive products with ammonia + silver nitrate. Benzene extract of allyl benzenesulfonate prepared from allyl alcohol, and benzene sulfonyl chloride in presence of aqueous sodium hydroxide, under vacuum distillation, residue darkened and exploded. Sodium Hydroxide + impure tetrahydrofuran, which can contain peroxides, can

cause serious explosions. Dry mixtures of sodium hydroxide and sodium tetrahydroborate liberate hydrogen explosively at 230-270 deg. C. Sodium Hydroxide reacts with sodium salt of trichlorophenol + methyl alcohol + trichlorobenzene + heat to cause an explosion.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill:

Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep container dry. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic. Deliquescent.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection In Case of a Large Spill:

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

STEL: 2 (mg/m³) from ACGIH (TLV) [United States] TWA: 2 CEIL: 2 (mg/m³) from OSHA (PEL) [United States] CEIL: 2 (mg/m³) from NIOSH. Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Deliquescent solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 40 g/mole

Color: White.

pH (1% soln/water): 13.5 [Basic.]
Boiling Point: 1388°C (2530.4°F)
Melting Point: 323°C (613.4°F)
Critical Temperature: Not available.
Specific Gravity: 2.13 (Water = 1)
Vapor Pressure: Not applicable.
Vapor Density: Not available.
Volatility: Not available.
Odor Threshold: Not available.
Water/Oil Dist. Coeff.: Not available.
Ionicity (In Water): Not available.
Dispersion Properties: See solubility in water.
Solubility: Easily soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.
Instability Temperature: Not available.
Conditions of Instability: Incompatible materials, moisture, moist air
Incompatibility with various substances:
 Highly reactive with metals. Reactive with oxidizing agents, reducing agents, acids, alkalis, moisture.
Corrosivity: Not available.
Special Remarks on Reactivity:
 Hygroscopic. Much heat is evolved when solid material is dissolved in water. Therefore cold water and caution must be used for this process. Sodium hydroxide solution and octanol + diborane during a work-up of a reaction mixture of oxime and dichlorane in tetrahydrofuran is very exothermic, a mild explosion being noted on one occasion. Reactive with water, acids (mineral, non-oxidizing, e.g. hydrochloric, hydrofluoric acid, muriatic acid, phosphoric), acids (mineral, oxidizing e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic e.g. acetic acid, benzoic acid, formic acid, methacolic acid, oxalic acid), aldehydes (e.g. acetaldehyde, acrolein, chloral hydrate, formaldehyde), carbamates (e.g. carbamate, carbofuran), esters (e.g. butyl acetate, ethyl acetate, propyl formate), halogenated organics (dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), isocyanates (e.g. methyl isocyanate), ketones (acetone, acetophenone, MEK, MIBK), acid chlorides, strong bases, strong oxidizing agents, strong reducing agents, flammable liquids, powdered metals and metals (i.e. aluminum, tin, zinc, hafnium, rhenium nickel), metals (alkali and alkaline e.g. cesium, potassium, sodium), metal compounds (toxic e.g. beryllium, lead acetate, nickel carbonyl, tetraethyl lead), nitrides (e.g. potassium nitride, sodium nitride), nitriles (e.g. acetonitrile, methyl cyanide), nitro compounds (organic e.g. nitrobenzene, nitromethane), acetic anhydride, chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, hydrosulfuric acid, oleum, propiolactone, acrylonitrile, phosphorus pentoxide, chloroethanol, chloroform-methanol, tetrahydroborate, cyanogen azide, 1,2,4,5 tetrachlorobenzene, cinnamaldehyde. Reacts with formaldehyde hydroxide to yield formic acid, and hydrogen.
Special Remarks on Corrosivity: Very caustic to aluminum and other metals in presence of moisture.
Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:

LD50: Not available. LC50: Not available.

Chronic Effects on Humans:

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. May cause damage to the following organs: mucous membranes, upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans:

Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, .

Special Remarks on Toxicity to Animals:Lowest Published Lethal Dose: LD₅₀ [Rabbit] - Route: Oral; Dose: 500 mg/kg**Special Remarks on Chronic Effects on Humans:** May affect genetic material. Investigation as a mutagen (cytogenetic analysis)**Special Remarks on other Toxic Effects on Humans:****Section 12: Ecological Information**

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.**Special Remarks on the Products of Biodegradation:** Not available.**Section 13: Disposal Considerations****Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information**DOT Classification:** Class 8; Corrosive material**Identification:** : Sodium hydroxide, solid UNNA: 1823 PG: II**Special Provisions for Transport:** Not available.**Section 15: Other Regulatory Information****Federal and State Regulations:**

Illinois toxic substances disclosure to employee act: Sodium hydroxide Illinois chemical safety act: Sodium hydroxide New York release reporting list: Sodium hydroxide Rhode Island RTK hazardous substances: Sodium hydroxide Pennsylvania RTK: Sodium hydroxide Minnesota: Sodium hydroxide Massachusetts RTK: Sodium hydroxide New Jersey: Sodium hydroxide Louisiana spill reporting: Sodium hydroxide California Director's List of Hazardous Substances: Sodium hydroxide TSCA 8(b) inventory: Sodium hydroxide CERCLA: Hazardous substances.: Sodium hydroxide: 1000 lbs. (453.6 kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS E: Corrosive solid.

DSCG (EEC):

R35- Causes severe burns. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37/39- Wear suitable gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection:]

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity:

Specific hazard:

Protective Equipment:

Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 08:32 PM

Last Updated: 05/21/2013 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

PROD NAME: DIPSOL IZ-250 YR
 PROD CODE: DIZ250YR

Issue Date: 07/28/06
 Revised Date: 08/31/05
 Updated 02/16/16



DIPSOL OF AMERICA, INC.
GHS SAFETY DATA SHEET

177 : 9th 4th

IDENTIFICATION				
Product Name:		Dipsol IZ-250 YR		
Synonyms:		Product Code DIZ250YR		
Product Description:		Clear, Pale Yellow Liquid; No Odor		
Recommended Product Use:		Zinc-Nickel Plating Additive		
Manufacturer/Supplier:		Dipsol of America, Inc.		
Address:		34005 Schoolcraft Road Livonia, Michigan 48150 USA 866-DIPSOL-1, 734-281-0633		
General Contact:		CHEMTREC 800-424-9300		
Transportation/Emergency Contact:		Outside USA +1-703-527-3887		
HAZARD(S) IDENTIFICATION				
GHS Classification:				
Physical		Health	Environmental	
		Acute Toxicity- Category 3- Oral Skin Corrosion/Irritation- Category 2 Serious Eye Damage/Irritation- Category 2A 90-93% of mixture contains ingredients of unknown toxicity.	Aquatic Toxicity - unable to categorize	
GHS Label: DANGER!				
Symbols:				
Hazard Statements: H301 - Toxic if swallowed H315 - Causes skin irritation H319 - Causes serious eye irritation				
Precautionary Statements:				
Prevention		Response	Storage	
P201 - Wash all exposed areas thoroughly after handling. P270 - Do not eat, drink, or smoke when using this product. P280 - Wear protective gloves/eye protection/face protection.		P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water. Remove contact lenses if present and easy to do. Continue rinsing. P332+P313 - If skin irritation occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P331 - Specific Treatment (see First Aid Measures on this label)	P405 - Store locked up.	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

PROD NAME: DIPEDL IZ-250 YR
 PROD CODE: DIZ250YR

Issue Date: 07/24/06
 Revised Date: 08/31/15

P362 - Take off contaminated clothing and wash before reuse.

Other Hazards: None known

COMPOSITION INFORMATION ON INGREDIENTS

Component	CAS#	EINECS #	Concentration
2-Butyne-1,4-Diol	110-65-6	203-788-6	7% - 10% by weight

FIRST AID MEASURES

Inhalation: Toxic.

Get medical attention immediately. If it suspected that fumes are still present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus (SCBA). Remove victim to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin: Toxic. Contact with solid form, liquid, or mists can cause severe burns. Repeated skin contact at low levels may cause dermatitis. Harmful if absorbed through skin.

Get medical attention immediately. Flush exposed area with plenty of water for at least 15 minutes. While wearing protective gloves remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water. Chemical burns must be treated promptly by a physician. Wash clothing and clean shoes thoroughly before use or properly dispose in accordance with regulation regarding hazardous materials.

Eyes: Toxic. Can cause irritation or burns on direct contact. May cause eye injury, which may persist for several days. Prolonged contact may cause permanent eye injury, including blindness.

Get medical attention immediately. Take the victim immediately to the nearest eyewash or shower. Wash affected eyes under slowly running water for 15 minutes occasionally lifting upper and lower eyelids. Check for and remove contact lenses. Chemical burns must be treated promptly by a physician.

Ingestion: Very toxic if swallowed and may burn the mouth, throat, esophagus and other tissues of the digestive system. Symptoms of overexposure may include nausea, vomiting, and diarrhea, followed by weakness, tremors, shallow respiration, convulsions, and coma. May cause brain and/or kidney damage. Exposure to fluoride compounds can result in systemic toxic effects on the heart, liver, and kidneys. Calcium levels in the body may be depleted leading to hypocalcemia and death. Large volumes may be fatal if swallowed.

Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move person to fresh air. Keep warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water or milk to drink. Stop if exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that the vomit does not enter the lungs. Contact the POISON CONTROL CENTER for the most current information. Chemical burns must be treated promptly by a physician.

Carcinogenicity: No known significant effects or critical hazards.

NTP: No

IARC-1: No

OSHA REGULATED: No

CAUTION: Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie, belt or waistband. No action shall be taken involving personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear protective gloves or wash contaminated clothing thoroughly with water before removing.

5. FIRE-FIGHTING MEASURES

General Hazards: CORROSIVE.

Extinguishing Media: Use an extinguishing media suitable for the surrounding fire. Prevent run-off to enter sewers or waterways. Dry chemical, carbon dioxide, foam and water, as appropriate for surrounding materials.

Fire Fighting Procedures: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Specific Fire and Explosion Hazards: Avoid contact with water. Contact with water generates heat.

Hazardous Combustion Products: Hazardous combustion gasses or vapors are possible in the event of a fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Immediately contact emergency personnel. Keep unnecessary personnel away. Only trained personnel using preplanned procedures should respond to uncontrolled releases.

Use suitable protective equipment. Fumes, vapors or dusts may be present and proper exposure control and personal protective equipment are required.

Caution - spills may cause floors to become slippery.

Environmental Precautions: Avoid dispersal of spilled material and runoff. Prevent contact with soil, waterways, drains and sewers.

Methods and Materials for Containment and Clean Up: For small spills use suitable adsorbent material. DO NOT use sawdust or other organic materials. Collect for disposal in plastic recovery drums. Flush residue with plenty of water to chemical drain. For large spill, dike spilled material or otherwise contain material to ensure that runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Refer to Section 15 for spill/release reporting information.

7. HANDLING AND STORAGE

Handling: Do not get in eyes, on skin, or on clothing. Do not ingest. Avoid breathing vapor or dust. Keep container closed. Use only with adequate ventilation. Use good personal hygiene practices. Wash thoroughly after handling and before eating, drinking, or smoking.

Storage: Material should be stored in the properly sealed original container in an area with proper containment. Keep container in a cool well ventilated area. Do not store at temperatures below 60° F (15° C) or above 95° F (35° C).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Component	Units are given in mg/m ³ unless otherwise specified		
	OSHA PEL	NIOSH	ACGIH TWA
2-Butyne-1,4-Diol	Not available	Not available	Not available

Appropriate Engineering Controls: Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal Protective Equipment (PPE):

Eye Protection: Full Face Shield. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mist, gasses or dust.

Skin Protection: Impervious nitrile rubber or other suitable gloves with gauntlets. Protective clothing

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with chemical resistant rubber apron or suit, gloves and boots. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection: When exposure above the established standard is likely, a respiratory protection program that complies with OSHA General Industry Standard 1910.134 should be implemented. Wear full face-piece respirators approved by MSHA/NIOSH if mist is expected.

9. PHYSICAL and CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear, Pale Yellow
Odor/Odour:	No Odor
Odor/Odour Threshold:	Not available
pH:	7-9
Melting Point:	Not applicable
Freezing Point:	32° F (0° C)
Initial Boiling Point/Range:	Not available
Flash Point/Method:	Not available
Evaporation Rate (Water=1):	Not available
Flammability (solid, gas):	Not applicable
Flammability/Explosion Limits:	Lower Limit =, Upper Limit = Not available
Vapor/Vapour Pressure:	Not available
Vapor/Vapour Density (Air=1):	Not available
Relative Density/Specific Gravity:	1.03-1.05 @ 25° C
Specific Weight/Weight Density:	8.68 lb/gal
% Solubility in Water:	100%
n-Octanol/Water Partition Coefficient:	Not available
Auto-Ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available

10. STABILITY and REACTIVITY

Reactivity/Stability: Stable under recommended handling and storage conditions.

Possibility of Hazardous Reactions: Strong acids, strong oxidizing agents, acid chlorides, halogens, alkali hydroxides, heavy metal salts.

Conditions to Avoid: Incompatible materials and extreme temperatures.

Incompatible Materials: Strong acids, strong oxidizing agents, acid chlorides, halogens, alkali hydroxides, heavy metal salts.

Hazardous Decomposition Products: Carbon monoxides, irritating and toxic fumes/gases, carbon dioxide, acetylene, formaldehyde.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure and Acute Health Effects:

Eye Contact: Irritating. May cause irreversible eye injury.

Skin Contact: Irritating. May cause burns. Harmful if absorbed through skin.

Ingestion: Toxic; Harmful if swallowed. Causes serious digestive/gastrointestinal tract (mouth, throat, esophagus, stomach) irritation, nausea, vomiting, and/or diarrhea. May cause severe and permanent damage to the digestive system. May affect behavior/central nervous system.

Inhalation: Toxic; Inhalation of vapors or mist cause irritation of the mucous membranes and respiratory tract (nose, throat, lungs), coughing, wheezing, shortness of breath. Effects of exposure may be delayed.

Acute Effects from Overexposure: Toxic if swallowed and may cause death. May cause fluorosis.

Chronic Effects from Overexposure: Toxic; may produce inflammation of the skin, eyes, and mucous membranes.

Target Organ Effects: May cause damage to the lungs, respiratory tract, mucus membranes, skin, eye, and central nervous system.

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Acute Toxicity Values: Data source: US National Library of Medicine Hazardous Substances Data Bank. Available: <http://toxnet.nlm.nih.gov>. August 26, 2012.

Ingredient	Value		
	Oral	Dermal	Inhalation
2-Butyne-1,4-Diol	LD ₅₀ (rat) = 132-176 mg/kg	LD ₅₀ (rat) = 424-1240 mg/kg	Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity: Data sources include:
 US Environmental Protection Agency. 2007. ECOTOX User Guide: ECOTOXicology Database System. Version 4.0. Available: <http://cfpub.epa.gov/ecotox/>. July 15, 2015.
 US National Library of Medicine Hazardous Substances Data Bank. Available: <http://toxnet.nlm.nih.gov>. November 26, 2012.

Ingredient:	Aquatic	Terrestrial
2-Butyne-1,4-Diol	LC ₅₀ (fathead minnow) = 53.6 mg/kg/96 hr	Not available

Aquatic: Not available.

Terrestrial: Not available.

Persistence and Degradability: Not available.

Bioaccumulative Potential: Not available.

Mobility: Not available.

Other Adverse Effects: None known.

13. DISPOSAL CONSIDERATIONS

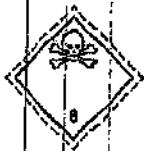
Disposal Method: The waste stream should be profiled by a licensed hazardous waste treatment and disposal facility as the product, solutions of this products and mixtures containing this product must be handled as a RCRA hazardous waste (40 CFR 161). See Section 8 for Exposure Controls and Personal Protective Measures. Processing, use, contamination, or otherwise altering this material may make waste management information presented herein to be incomplete, inaccurate, or otherwise inappropriate. Refer to regional, state and local disposal regulations as they may differ from US federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements. Do not dispose of in sewage or drains. Recycle or reclaim when feasible.

RCRA Hazardous Waste Number: User determined

14. TRANSPORT INFORMATION

UN#: UN2810	TDG/TRANSPORT HAZARD CLASS: 6.1	PKG GRP: III
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UN PROPER SHIPPING NAME: Toxic Liquid, Organic, N.O.S. (2-Butyne-1,4-Diol)



Environmental Hazards: UN Model Regulations Class 6.1, PG III

IMDG: Severe Marine Pollutant	ADR: Class 6.1, Classification Code T4, PG III	RID: Class 6.1, Classification Code T4, PG III	ADN: Class 6.1, Classification Code T4, PG III
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Special Precautions: Quantity limitations apply for transport by Passenger Aircraft, Passenger Rail, and Cargo Aircraft. Consult applicable shipping regulations prior to shipment by these methods.

5. REGULATORY INFORMATION

US FEDERAL REGULATIONS:

DOT REPORTABLE QUANTITY (RQ): Not applicable.

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200: See Section 8.

CERCLA/SUPERFUND, 40 CFR 117,302 & 304: Notification of spills of this product is not required.

SARA SUPERFUND AMENDMENTS & REAUTHORIZATIONS ACT OF 1986 (TITLE III) SECTIONS 302, 311, 312 & 313:

SECTION 302: EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): This product does not contain ingredients listed APPENDIX A of 40 CFR 355.

SECTION 311 & 312 – MSDS REQUIREMENTS (40 CFR 370):

SECTION 311 Hazard Categories (40 CFR 370): This product contains ingredient(s) listed in APPENDIX A of 40 CFR 370 and hazardous chemicals under 29 CFR 1910.1200 (c). The product should be reported under the following E.P.S. categories:

Immediate (Acute) Health Hazard

Delayed (Chronic) Health Hazard

Under Section 311, submittal of MSDS or a list of product names to the local emergency planning commission, state emergency response commission, the local fire department is required after October 17, 1987. Consult the regulation for pertinent changes and updates.

SECTION 312 Threshold Planning Quantity (40 CFR 372): Not applicable.

SECTION 313 – LIST OF TOXIC CHEMICALS (40 CFR 372) Title III SARA (Superfund Amendments and Reauthorization Act) of 1986 Ingredients list 40 CFR 372.65): This product does not contain toxic chemicals subject to the reporting requirements of Section 313, Title III of the SARA (Superfund Amendments and Reauthorizations Act) of 1986 and does not contain any ingredients listed under 40 CFR 372.65

TSCA (TOXIC SUBSTANCE CONTROL ACT): The chemical ingredient(s) in this product are listed on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION & RECOVERY ACT (RCRA), 40 CFR SUBPARTS C & D: Please refer to section 13, disposal information for pertinent data.

TOTAL TOXIC ORGANICS: This product does not contain ingredients on the list of Total Toxic Organics.

OSHA PROCESS SAFETY (1910.119): This product does not contain ingredients listed in Appendix A of 29 CFR 1910.119 List of Highly Hazardous Chemicals, Toxics and Reactives of OSHA Process Safety Management.

CLEAN AIR ACT: This product does not contain ingredient(s) listed on the Hazardous Air Pollutants (HAPS) of CAA 40 CFR 112 (G).

OZONE DEPLETING SUBSTANCES: This product does not contain ingredient(s) listed on the Ozone Depleting Substances of CAA 40 CFR 82.

CLEAN WATER ACT: This product does not contain a designated toxic pollutant pursuant to section 307(a)(1)

PROD NAME: DIPSOL IZ-250 YR
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Revised Date: 08/11/15

US STATE REGULATIONS:

CALIFORNIA PROPOSITION 65: This product does not contain a chemical(s) known to the State of California to cause cancer.

This product complies with the MSDS and labeling requirements of the Safe Drinking Water and Toxic Enforcement Act of 1988. This product does not contain ingredients listed on California Prop 65 list.

MICHIGAN CRITICAL MATERIALS: This product does not contain ingredient(s) listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW (RTK), Toxic Substance Disclosure, Release Reporting, Spill Reporting and other Hazardous Disclosure Regulations:

Individual State requirements may differ from US federal requirements. Confirm requirements with appropriate State authority.

CANADA: WHMIS (Workplace Hazardous Materials Information System):

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Hazard Classification/Division:

D-1B: Material causing immediate and serious toxic effects

D-2A: Materials causing other toxic effects

Ingredients Disclosure List

Listed

Domestic Substance List:

All components are listed or exempt.



The information listed above does not include all Federal, State, and International regulations. The regulations listed above may change from time to time; it is the users' responsibility to keep advised of current regulatory requirements.

OTHER INFORMATION

HMIS HAZARD RATINGS

Health: 2

Flammability: 0

Physical Hazard: 1

PPE: H

Protection = J (Safety goggles, gloves, apron, and vapor respirator)

Emergency Response Guidebook Number: 154

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Original Issue Date: July 28, 2006

Revision Date: August 31, 2015

PROD NAME: DIPSOL P-0731
 PROD CODE: DP0731

Issue Date: 01/1/00
 Revised Date: 08/14/16
 updated 2.16.16



DIPSOL OF AMERICA, INC.
GHS SAFETY DATA SHEET

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IDENTIFICATION

Product Name: Dipsol P-0731
Synonyms:
Product Description: Product Code DP0731
 Clear to Pale Yellow Liquid; Mild Odor
Recommended Product Use: Alkaline Plating Bath Solution
Manufacturer/Supplier: Dipsol of America, Inc.
Address: 34006 Schoolcraft Road
 Livonia, Michigan 48150 USA
General Contact: 888-DIPSOL-1, 734-261-0633
Transportation/Emergency Contact: CHEMTREC 800-424-9300
 Outside USA +1-703-527-3887

HAZARD IDENTIFICATION

Physical	Health	Environmental
Corrosive to Metals - Category 1	Acute Toxicity, Category 2 - Oral Acute Toxicity, Category 2 - Inhalation - Dust Skin Corrosion/Irritation - Category 1 Serious Eye Damage/Irritation - Category 1 Specific Target Organ Toxicity Following Single Exposure - Category 1 - Respiratory System Specific Target Organ Toxicity Following Repeated Exposure - Category 2 - Respiratory, Tract Irritation	Aquatic Toxicity - Acute: Out of Category Chronic: Out of Category

GHS Label: DANGER!

Symbols:



Hazard Statements:

- H300+H330 - Fatal if swallowed or if inhaled
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
- H335 - May cause respiratory irritation
- H370 - Causes damage to organs - respiratory system

Precautionary Statements:

Prevention	Response	Storage	Disposal
P234 - (See only in original container) P260 - Do not breathe dust/fume/gas/mist/vapor/spray P284 - Wear full protective equipment P270 - Do not eat, drink, or	P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - IF ON SKIN (or hair): Remove	P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up. P406 - Store in a corrosive resistant container or container with a resistant inner liner.	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

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Issue Date: 01/13/00
 Revised Date: 09/14/16

<p>smoke when using this product. P271 - Use only outdoors or in a well ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P281 - Wear respiratory protection.</p>	<p>Immediately all contaminated clothing. Rinse skin with water. P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P308+P351+P338 - IF IN EYES: Rinse cautiously with water. Remove contact lenses if present and easy to do. Continue rinsing. P307+P311 - IF EXPOSED: Call a POISON CENTER or doctor/physician. P321 - Specific Treatment (see First Aid Measures on this label) P333 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material damage.</p>		
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Other Hazards: None known

COMPOSITION INFORMATION ON INGREDIENTS

Component	CAS#	EINECS #	Concentration
Sodium Hydroxide	1310-73-2	215-185-5	1% - 10% by weight
Mercapto benzothiazole	149-30-4	205-736-8	1% - 5% by weight

FIRST AID MEASURES

Inhalation: Corrosive or toxic by inhalation.
 Get medical attention immediately. If it suspected that fumes are still present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus (SCBA). Remove victim to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin: Corrosive to skin. Contact with solid form, liquid, or mists can cause severe burns. Profound damage to tissues may occur with prolonged exposure.
 Get medical attention immediately. Flush exposed area with plenty of water for at least 15 minutes. While wearing protective gloves remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water. Chemical burns must be treated promptly by a physician. Wash clothing and clean shoes thoroughly before use or properly dispose in accordance with regulation regarding hazardous materials.

Eyes: Corrosive to eyes. Can cause irritation or burns on direct contact. May cause eye injury, which may persist for several days. Prolonged contact may cause permanent eye injury, including blindness.
 Get medical attention immediately. Take the victim immediately to the nearest eyewash or shower. Wash affected eyes under slowly running water for 15 minutes occasionally lifting upper and lower eyelids. Check for and remove contact lenses. Chemical burns must be treated promptly by a physician.

Ingestion: Very toxic if swallowed and may burn the mouth, throat, esophagus and other tissues of the digestive system. May cause abdominal cramps with distension of stomach. Damage to digestive tract including corrosive effects. May be fatal if swallowed.
 Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move person to fresh air. Keep warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if exposed person feels sick as vomiting may be dangerous.

PROD NAME: DIPSO, P-0731
PROD CODE: DPO731

Issue Date: 07/31/00
Revised Date: 09/14/15

Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that the vomit does not enter the lungs. Contact the POISON CONTROL CENTER for the most current information. Chemical burns must be treated promptly by a physician.

Carcinogenicity: No known significant effects or critical hazards.
NTP: No IARC-1: No OSHA REGULATED: No

CAUTION: Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie, belt or waistband. No action shall be taken involving personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear protective gloves or wash contaminated clothing thoroughly with water before removing.

5. FIRE FIGHTING MEASURES

General Hazards: CORROSIVE.

Extinguishing Media: Use an extinguishing media suitable for the surrounding fire. Prevent run-off to enter sewers or waterways. Dry chemical, carbon dioxide, foam and water, as appropriate for surrounding materials.

Fire Fighting Procedures: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Specific Fire and Explosion Hazards: Avoid contact with water. Contact with water generates heat.

Hazardous Combustion Products: Hazardous combustion gasses or vapors are possible in the event of a fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Immediately contact emergency personnel. Keep unnecessary personnel away. Only trained personnel using preplanned procedures should respond to uncontrolled releases.

Use suitable protective equipment. Fumes, vapors or dusts may be present and proper exposure control and personal protective equipment are required.

Caution - spills may cause floors to become slippery.

Environmental Precautions: Avoid dispersal of spilled material and runoff. Prevent contact with soil, waterways, drains and sewers.

Methods and Materials for Containment and Clean Up: For small spills use suitable adsorbent material. DO NOT use sawdust or other organic materials. Collect for disposal in plastic recovery drums. Flush residue with plenty of water to chemical drain. For large spill, dike spilled material or otherwise contain material to ensure that runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Refer to Section 15 for spill/release reporting information.

7. HANDLING AND STORAGE

Handling: Do not get in eyes, on skin, or on clothing. Do not ingest. Avoid breathing vapor or dust. Keep container closed. Use only with adequate ventilation. Use good personal hygiene practices. Wash thoroughly after handling and before eating, drinking, or smoking.

Storage: Material should be stored in the properly sealed original container in an area with proper containment. Keep container in a cool well ventilated area. Do not store at temperatures below 60° F (15° C) or above 95° F (35° C).

EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Component	Units are given in mg/m ³ unless otherwise specified		
	OSHA PEL	NIOSH	ACGIH TWA
Sodium Hydroxide	2.0	Not available	2.0
2-Mercaptobenzothiazole	Not available	Not available	Not available

Appropriate Engineering Controls: Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal Protective Equipment (PPE):

Eye Protection: Full Face Shield. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mist, gases or dust.

Skin Protection: Impervious nitrile rubber or other suitable gloves with gauntlets. Protective clothing with chemical resistant rubber apron or suit, gloves and boots. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection: When exposure above the established standard is likely, a respiratory protection program that complies with OSHA General Industry Standard 1910.134 should be implemented. Wear full face-piece respirators approved by MSHA/NIOSH if mist is expected.

PHYSICAL and CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear to Pale Yellow
Odor/Odour:	Mild Odor
Odor/Odour Threshold:	Not available
pH:	>13
Melting Point:	Not applicable
Freezing Point:	32° F (0° C)
Initial Boiling Point/Range:	Not available
Flash Point/Method:	Not available
Evaporation Rate (Water=1):	Not available
Flammability (solid, gas):	Not applicable
Flammability/Explosion Limits:	Lower Limit =, Upper Limit = Not available
Vapor/Vapour Pressure:	Not available
Vapor/Vapour Density (Air=1):	Not available
Relative Density/Specific Gravity:	1.12 @ 25° C
Specific Weight/Weight Density:	9.34 lb/gal
% Solubility in Water:	100%
n-Octanol/Water Partition Coefficient:	Not available
Auto-ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available

STABILITY and REACTIVITY

Reactivity/Stability: Stable under recommended handling and storage conditions.

Possibility of Hazardous Reactions: Strong acids, strong oxidizing agents.

Conditions to Avoid: Contact with organic materials and concentrated acids may cause violent reactions. Contact with magnesium, aluminum, zinc, tin, chromium, brass, and bronze generates

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explosive hydrogen gas. Reacts exothermically on contact with water.
Incompatible Materials: Strong acids, flammable and combustible materials, organic halogens, aluminum, tin, and zinc metals, moisture, and most organic materials.
Hazardous Decomposition Products: Sodium monoxide, Silicon oxide. Reacts with some metals to form hydrogen gas.

TOXICOLOGICAL INFORMATION

Routes of Exposure and Acute Health Effects:
Eye Contact: Irritating. May cause irreversible eye injury.
Skin Contact: Irritating. Repeated or prolonged contact causes sensitization, asthma, and eczema.
Ingestion: Harmful if swallowed. Causes serious digestive/gastrointestinal tract (mouth, throat, esophagus, stomach) irritation, nausea, vomiting, and/or diarrhea.
Inhalation: Inhalation of vapors or mist cause irritation of the mucous membranes and respiratory tract (nose, throat, lungs), coughing, wheezing, shortness of breath.
Acute Effects from Overexposure: Corrosive; may produce severe skin, eyes, respiratory tract irritation and upper gastrointestinal tract damage. Toxic if swallowed and may cause death.
Chronic Effects from Overexposure: Corrosive; may produce inflammation of the skin, eyes, and mucous membranes. Prolonged inhalation may cause pulmonary fibrosis known as silicosis.
Target Organ Effects: May cause damage to the lungs, respiratory tract, mucus membranes, skin, and eyes.

Acute Toxicity Values: Data source: US National Library of Medicine Hazardous Substances Data Bank. Available: <http://toxnet.nlm.nih.gov>. November 26, 2012.

Ingredient	Value		
	Oral	Dermal	Inhalation
Sodium Hydroxide	LD ₅₀ (mouse) = 40 mg/kg	Not available	Not available
2-Mercaptobenzothiazole	LD ₅₀ (mouse) = 1658 mg/kg	Not available	Not available

Ecotoxicity: Data sources include:
 US Environmental Protection Agency, 2007. ECOTOX User Guide: ECOTOXicology Database System, Version 4.0. Available: <http://cfpub.epa.gov/ecotox/>. June 15, 2015.
 US National Library of Medicine Hazardous Substances Data Bank. Available: <http://toxnet.nlm.nih.gov>. November 26, 2012.

Ingredient	Aquatic	Terrestrial
	Sodium Hydroxide	LC ₅₀ (static, mosquito fish) = 125 mg/L/96 hr
2-Mercaptobenzothiazole	LC ₅₀ (static, Daphnia magna) = 3.6-4.7 mg/L/48 hr	LD ₅₀ (oral, house mouse) = 416-461 mg/kg

Aquatic: Harmful to aquatic life.
Terrestrial: Not available.

Persistence and Degradability: There is no degradation of sodium hydroxide in waters; only loss by absorption or through chemical neutralization.
Bioaccumulative Potential: May cause long-term adverse effects in the aquatic environment.
Mobility: May cause long-term adverse effects in the aquatic environment.

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Other Adverse Effects: None known.

DISPOSAL CONSIDERATIONS

Disposal Method: The waste stream should be profiled by a licensed hazardous waste treatment and disposal facility as the product, solutions of this product and mixtures containing this product must be handled as a RCRA hazardous waste (40 CFR 161). See Section 8 for Exposure Controls and Personal Protective Measures. Processing, use, contamination, or otherwise altering this material may make waste management information presented herein to be incomplete, inaccurate, or otherwise inappropriate. Refer to regional, state and local disposal regulations as they may differ from US federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements. Do not dispose of in sewage or drains. Recycle or reclaim when feasible.

RCRA Hazardous Waste Number: D002

TRANSPORT INFORMATION

UN#: UN 3268

TDG/TRANSPORT HAZARD
CLASS: 8

PKG GRP: II

UN PROPER SHIPPING NAME: Corrosive Liquid, Basic, Inorganic, N.O.S. (Sodium Hydroxide)



Environmental Hazards: UN Model Regulations Class 8, PG II

IMDG: Severe Marine
Pollutant

ADR: Class 8,
Classification Code C5,
PG II

RID: Class 8,
Classification Code C5,
PG II

ADN: Class 8,
Classification Code C5,
PG II

Special Precautions: Quantity limitations apply for transport by Passenger Aircraft, Passenger Rail, and Cargo Aircraft. Consult applicable shipping regulations prior to shipment by these methods.

REGULATORY INFORMATION

US FEDERAL REGULATIONS:

DOT REPORTABLE QUANTITY (RQ):

Sodium Hydroxide is a RQ when this material meets or exceeds 1,000 lbs. (454 kg) per bulk package.

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200: See Section 8.

CERCLA/SUPERFUND, 40 CFR 117,302 & 304: Notification of spills of this product is required.

Chemical Name: Sodium Hydroxide

RQ: 1,000 lbs.

Category: C

SARA SUPERFUND AMENDMENTS & REAUTHORIZATIONS ACT OF 1986 (TITLE III) SECTIONS 302, 311, 312 & 313:

SECTION 302: EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): This product does not contain ingredients listed APPENDIX A of 40 CFR 355.

SECTION 311 & 312 - MSDS REQUIREMENTS (40 CFR 370):

SECTION 311 Hazard Categories (40 CFR 370): This product contains ingredient(s) listed in APPENDIX A of 40 CFR 370 and hazardous chemicals under 29 CFR 1910.1200 (c). The product should be reported under the following E.P.S. categories:

Immediate (Acute) Health Hazard

Delayed (Chronic) Health Hazard

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Under Section 311, submittal of MSDS or a list of product names to the local emergency planning commission, state emergency response commission, the local fire department is required after October 17, 1987. Consult the regulation for pertinent changes and updates.

SECTION 312 Threshold Planning Quantity (40CFR 372): Not applicable.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) Title III SARA (Superfund Amendments and Reauthorization Act) of 1986 ingredients list 40 CFR 372.65): This product does not contain toxic chemicals subject to the reporting requirements of Section 313, Title III of the SARA (Superfund Amendments and Reauthorizations Act) of 1986 and does not contain any ingredients listed under 40 CFR 372.65

TSCA (TOXIC SUBSTANCE CONTROL ACT): The chemical ingredient(s) in this product are listed on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION & RECOVERY ACT (RCRA), 40 CFR SUBPARTS C & D: Please refer to section 13, disposal information for pertinent data.

TOTAL TOXIC ORGANICS: This product does not contain ingredients on the list of Total Toxic Organics.

OSHA PROCESS SAFETY (1910.119): This product does not contain ingredients listed in Appendix A of 29 CFR 1910.119 List of Highly Hazardous Chemicals, Toxics and Reactives of OSHA Process Safety Management.

CLEAN AIR ACT: This product does not contain ingredient(s) listed on the Hazardous Air Pollutants (HAPS) of CAA 40 CFR 112 (G).

OZONE DEPLETING SUBSTANCES: This product does not contain ingredient(s) listed on the Ozone Depleting Substances of CAA 40 CFR 82.

CLEAN WATER ACT: This product does contain a designated toxic pollutant pursuant to section 307(a)(1).

US STATE REGULATIONS:

CALIFORNIA PROPOSITION 65: This product does not contain a chemical(s) known to the State of California to cause cancer.

This product complies with the MSDS and labeling requirements of the Safe Drinking Water and Toxic Enforcement Act of 1986. This product does not contain ingredients listed on California Prop 65 list.

MICHIGAN CRITICAL MATERIALS: This product does not contain ingredient(s) listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW (RTK), Toxic Substance Disclosure, Release Reporting, Spill Reporting and other Hazardous Disclosure Regulations:

Individual State requirements may differ from US federal requirements. Confirm requirements with appropriate State authority.

CANADA: WHMIS (Workplace Hazardous Materials Information System):

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Sodium Hydroxide:

Hazard Classification/Division:

E: Corrosive

D-1B: Toxic material causing serious and immediate effects

Ingredients Disclosure List

Listed

Domestic Substances List:

All components are listed or exempt.

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The information listed above does not include all Federal, State, and International regulations. The regulations listed above may change from time to time; it is the users' responsibility to keep advised of current regulatory requirements.

6. OTHER INFORMATION

HMIS HAZARD RATINGS

Health: 3 Flammability: 0 Physical Hazard: 1 PPE: J
Protection = J (Safety goggles, gloves, apron, and dust & vapor respirator)

Emergency Response Guidebook Number: 154

Disclaimer: The information contained herein is accurate to the best of our knowledge. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER NATURE ARE MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS.

Original Issue Date: January 31, 2000

Revision Date: September 14, 2015

PROD NAME: DIPSOL IZ-250YB
 PROD CODE: IZ250YB

Issue Date: 07/28/06
 Revised Date: 05/08/16



DIPSOL OF AMERICA, INC.
GHS SAFETY DATA SHEET

1 IDENTIFICATION			
Product Name:	Dipsol IZ-250YB		
Synonyms:	Product Code IZ250YB		
Product Description:	Yellow Liquid, Mild Odor		
Recommended Product Use:	Alkaline Zinc Nickel Additive		
Manufacturer/Supplier:	Dipsol of America, Inc.		
Address:	34005 Schoolcraft Road Livonia, Michigan 48150 USA		
General Contact:	866-DIPSOL-1, 734-261-0633		
Transportation/Emergency Contact:	CHEMTREC 800-424-9300 Outside USA 703-527-3887		
2 HAZARD IDENTIFICATION			
GHS Classification:			
Physical		Health	Environmental
Corrosive to Metals - Category 1		Acute Toxicity - Category 1 Skin Corrosive - Category 1 Serious Eye Damage - Category 1 Target Organ Toxicity (Repeated Exposure) - Category 1	Aquatic Toxicity - Acute: Category 1 Chronic: Category 1
GHS Label: DANGER!			
Symbols:			
Hazard Statements:			
H260 - May be corrosive to metals H301 - Toxic if swallowed H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage H370 - Causes damage to organs			
Precautionary Statements:			
Prevention	Response	Storage	Disposal
P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P221 - Keep/Store away from clothing/combustible materials. P234 - Keep only in original container.	P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P302+P350 - IF ON SKIN: Gently wash with plenty of soap and water.	P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up. P408 - Store in corrosive resistant container with a resistant inner liner.	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

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<p>P261 - Do not breathe dust/fume/gas/mist/vapor/spray. P262 - Do not get in eyes, on skin, or on clothing. P264 - Wash all exposed areas thoroughly after handling. P270 - Do not eat, drink, or smoke when using this product. P271 - Use only outdoors or in a well ventilated area. P272 - Contaminated work clothing should not be allowed out of the workplace. P273 - Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P286 - In case of inadequate ventilation, wear respiratory protection.</p>	<p>P303+P361+P353 - IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water. P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water. Remove contact lenses if present and easy to do. Continue rinsing. P310 - Immediately call POISON CENTER or doctor/physician. P321 - Specific Treatment (see First Aid Measures on this label) P361 - Remove immediately all contaminated clothing. P363 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material damage. P391 - Collect spillage.</p>		
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Other Hazards: None known

3. COMPOSITION INFORMATION ON INGREDIENTS

Component	CAS#	EINECS #	Concentration
Polyamine	25988-97-0	231-599-9	60 - 99% by weight
Diethylenetriamine	111-40-0	203-865-4	1 - 3% by weight

4. FIRST AID MEASURES

Inhalation: If vapors, mists or spray of this solution are inhaled, symptoms of exposure may include coughing, sore throat, and shortness of breath. Sensitive individuals may develop asthma, bronchitis, shortness of breath, and wheezing.

Get medical attention immediately. If it suspected that fumes are still present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus (SCBA). Remove victim to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin: Brief contact may cause slight irritation and local redness. May cause skin allergy with itching, redness or rash.

Get medical attention immediately. Flush exposed area with plenty of water for at least 15 minutes. While wearing protective gloves remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water. Chemical burns must be treated promptly by a physician. Wash clothing and clean shoes thoroughly before use or properly dispose in accordance with regulation regarding hazardous materials.

Eyes: Can cause irritation or burns on direct contact. May cause eye injury, which may persist for several days. Prolonged contact may cause permanent eye injury (blindness).

Get medical attention immediately. Take the victim immediately to the nearest eyewash or shower. Wash affected eyes under slowly running water for 15 minutes occasionally lifting upper and lower eyelids. Check for and remove contact lenses. Chemical burns must be treated promptly by a physician.

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Ingestion: Moderately toxic if swallowed and may burn the mouth, throat, esophagus and other tissues of the digestive system. May cause nausea, vomiting, and/or diarrhea. May cause systemic illness.

Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move person to fresh air. Keep warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that the vomit does not enter the lungs. Contact the POISON CONTROL CENTER for the most current information. Chemical burns must be treated promptly by a physician.

Carcinogenicity: Nickel Sulfate listed by agencies tracking their carcinogenic potential.

Nickel Sulfate NTP: No IARC-1: No OSHA REGULATED: No

CAUTION: Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie, belt or waistband. No action shall be taken involving personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear protective gloves or wash contaminated clothing thoroughly with water before removing.

5. FIRE FIGHTING MEASURES

General Hazards: CORROSIVE; MAY CAUSE BURNS, HARMFUL BY INGESTION.

Extinguishing Media: Use an extinguishing media suitable for the surrounding fire. Prevent run-off to enter sewers or waterways. Dry chemical, carbon dioxide, foam and water, as appropriate for surrounding materials.

Fire Fighting Procedures: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Specific Fire and Explosion Hazards: Avoid contact with water. Avoid toxic fumes that arise upon decomposition due to extreme temperature of fire. Wear self-contained breathing apparatus (SCBA) and protective clothing.

Hazardous Combustion Products: Hazardous combustion gasses or vapors, including nitrogen oxides and carbon oxides, are possible in the event of a fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Immediately contact emergency personnel. Keep unnecessary personnel away. Only trained personnel using preplanned procedures should respond to uncontrolled releases.

Use suitable protective equipment. Fumes, vapors or mists may be present and proper exposure control and personal protective equipment are required.

Caution - spills may cause floors to become slippery.

Environmental Precautions: Avoid dispersal of spilled material and runoff. Prevent contact with soil, waterways, drains and sewers.

Methods and Materials for Containment and Clean Up: For small spills use suitable adsorbent material. DO NOT use sawdust or other organic materials. Collect for disposal in plastic recovery drums. Flush residue with plenty of water to chemical drain. For large spill, dike spilled material or otherwise contain material to ensure that runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Refer to Section 15 for spill/release reporting information.

7. HANDLING and STORAGE

Handling: Do not get in eyes, on skin, or on clothing. Do not ingest. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Use good personal hygiene practices. Wash thoroughly after handling and before eating, drinking, or smoking.

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Storage: Material should be stored in the properly sealed original container in an area with proper containment. Keep container in a cool well ventilated area. Do not store at temperature below 60° F (15° C) or above 95° F (35° C).

PHYSICAL CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Component	Units are given in mg/m ³ unless otherwise specified		
	OSHA PEL	NIOSH	ACGIH TWA
Polyamine	Not available	Not available	Not available
Diethylenetriamine	Not available	Not available	Not available

Appropriate Engineering Controls: Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal Protective Equipment (PPE):

Eye Protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mist, gasses or dust.

Skin Protection: Impervious nitrile rubber or other suitable gloves with gauntlets. Protective clothing with chemical resistant rubber apron or suit, gloves and boots. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection: When exposure above the established standard is likely, a respiratory protection program that complies with OSHA General Industry Standard 1910.134 should be implemented. Wear full face-piece respirators approved by MSHA/NIOSH if mist is expected.

PHYSICAL and CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Yellow
Odor/Odour:	Mild
Odor/Odour Threshold:	Not available
pH:	>11.5
Melting Point:	Not applicable
Freezing Point:	32° F/0° C
Initial Boiling Point/Range:	Not available
Flash Point/Method:	Not available
Evaporation Rate (Water=1):	Not available
Flammability (solid, gas):	Not applicable
Flammability/Explosion Limits:	Lower Limit =, Upper Limit = Not available
Vapor/Vapour Pressure:	Not available
Vapor/Vapour Density (Air=1):	Not available
Relative Density/Specific Gravity:	1.01-1.03 @ 25°C
Specific Weight/Weight Density:	8.5 lbs/gallon
% Solubility in Water:	100
n-Octanol/Water Partition Coefficient:	Not available
Auto-ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available

TOXICITY and REACTIVITY

Reactivity/Stability: Stable under recommended handling and storage conditions.

Possibility of Hazardous Reactions: Strong acids, strong oxidizing agents, copper and copper alloys.

Conditions to Avoid: Extreme temperatures and incompatible materials.

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Incompatible Materials: Strong acids, strong oxidizing agents, copper and copper alloys.
Hazardous Decomposition Products: Carbon oxides, nitrogen oxides

11. TOXICOLOGICAL INFORMATION

Routes of Exposure and Acute Health Effects:
Eye Contact: Corrosive causes burns, irritating. May cause irreversible eye injury.
Skin Contact: Corrosive causes burns, irritating.
Ingestion: Moderately acute oral toxicity. Causes serious digestive/gastrointestinal tract (mouth, throat, esophagus, stomach) irritation, nausea, vomiting, and/or diarrhea.
Inhalation: Inhalation of vapors or mist causes irritation of the mucous membranes and respiratory tract (nose, throat, lungs), coughing, wheezing, shortness of breath.
Acute Effects from Overexposure: Corrosive to skin, eyes, respiratory system, mouth, throat and stomach. Harmful if swallowed.
Chronic Effects from Overexposure: Prolonged or repeated contact with skin may cause an allergic skin reaction. May cause sensitization by skin contact.
Target Organ Effects: May cause damage to the lungs, respiratory tract, mucus membranes, skin, eye, lens or cornea.

Acute Toxicity Values: Data source: US National Library of Medicine Hazardous Substances Data Bank. Available: <http://toxnet.nlm.nih.gov>, November 26, 2012.

Ingredient	Value		
	Oral	Dermal	Inhalation
Polyamine	Not available	Not available	Not available
Diethylenetriamine	Not available	Not available	Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity: Data sources include:
 US Environmental Protection Agency. 2007. ECOTOX User Guide: ECOTOXicology Database System. Version 4.0. Available: <http://cfpub.epa.gov/ecotox/>, June 15, 2015.
 US National Library of Medicine Hazardous Substances Data Bank. Available: <http://toxnet.nlm.nih.gov>, November 26, 2012.

Ingredient:	Aquatic	Terrestrial
	Polyamine	Not available
Diethylenetriamine	LC ₅₀ (static, poecilla reticulata) = 1,014 mg/L/96 hr	Not available

Aquatic: Not harmful to aquatic life.
Terrestrial: Not available.

Persistence and Degradability: Not available.
Bioaccumulative Potential: Not available.
Mobility: Not available.
Other Adverse Effects: None known.

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3. DISPOSAL CONSIDERATIONS

Disposal Method: The waste stream should be profiled by a licensed hazardous waste treatment and disposal facility as in most cases the product, solutions of this products and mixtures containing this product must be handled as a RCRA hazardous waste (40 CFR 161). See Section 8 for Exposure Controls and Personal Protective Measures. Processing, use, contamination, or otherwise altering the material may make waste management information presented herein to be incomplete, inaccurate, or otherwise inappropriate. Refer to regional, state and local disposal regulations as they may differ from US federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements. Do not dispose of in sewage or drains. Recycle or reclaim when feasible.

RCRA Hazardous Waste Number: User determined

4. TRANSPORT INFORMATION

UN#: UN 2735

TDG/TRANSPORT HAZARD
CLASS: 8

PKG GRP: III

UN PROPER SHIPPING NAME: Amines Liquid, Corrosive, N.O.S. (Ethanolamine)



Environmental Hazards: UN Model Regulations Class 8, PG III

IMDG: Severe Marine
Pollutant

ADR: Class 8,
Classification Code C7,
PG III

RID: Class 8,
Classification Code C7,
PG III

ADN: Class 8,
Classification Code C7,
PG III

Special Precautions: Cargo Aircraft Only / Prohibited on Passenger Aircraft and Passenger Rail

5. REGULATORY INFORMATION

US FEDERAL REGULATIONS:

DOT REPORTABLE QUANTITY (RQ): Not applicable.

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200: See Section 8.

CERCLA/SUPERFUND, 40 CFR 117,302 & 304: Notification of spills of this product is not required.

SARA SUPERFUND AMENDMENTS & REAUTHORIZATIONS ACT OF 1986 (TITLE III) SECTIONS 302, 311, 312 & 313:

SECTION 302: EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): This product does not contain ingredients listed APPENDIX A of 40 CFR 355.

SECTION 311 & 312: - MSDS REQUIREMENTS (40 CFR 370):

SECTION 311 Hazard Categories (40 CFR 370): This product contains ingredient(s) listed in APPENDIX A of 40 CFR 370 and hazardous chemicals under 29 CFR 1910.1200 (c). The product should be reported under the following E.P.S. categories:

Immediate (Acute) Health Hazard

Delayed (Chronic) Health Hazard

Under Section 311, submittal of MSDS or a list of product names to the local emergency planning commission, state emergency response commission, the local fire department is required after October 17, 1987. Consult the regulation for pertinent changes and updates.

SECTION 312 Threshold Planning Quantity (40 CFR 372):

The Threshold Planning Quantity (TPQ) for this product if treated as a mixture is 10,000 lbs; however this

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product does not contain any ingredients with a TPQ of less than 10,000 lbs.

SECTION 313 -- LIST OF TOXIC CHEMICALS (40 CFR 372) Title III SARA (Superfund Amendments and Reauthorization Act) of 1986 Ingredients list 40 CFR 372.65: This product does not contain toxic chemicals subject to the reporting requirements of Section 313, Title III of the SARA (Superfund Amendments and Reauthorizations Act) of 1986 and does not contain any ingredients listed under 40 CFR 372.65

TSCA (TOXIC SUBSTANCE CONTROL ACT): The chemical ingredient(s) in this product are listed on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION & RECOVERY ACT (RCRA), 40 CFR SUBPARTS C & D: Please refer to section 13, disposal information for pertinent data.

TOTAL TOXIC ORGANICS: This product does not contain ingredients on the list of Total Toxic Organics.

OSHA PROCESS SAFETY (1910.119): This product does not contain ingredients listed in Appendix A of 29 CFR 1910.119 List of Highly Hazardous Chemicals, Toxics and Reactives of OSHA Process Safety Management.

CLEAN AIR ACT: This product does not contain ingredient(s) listed on the Hazardous Air Pollutants (HAPS) of CAA 40 CFR 112 (G).

OZONE DEPLETING SUBSTANCES: This product does not contain ingredient(s) listed on the Ozone Depleting Substances of CAA 40 CFR 82.

CLEAN WATER ACT: This product does not contain a designated toxic pollutant pursuant to section 307(a)(1) and is subject to effluent limitations.

US STATE REGULATIONS:

CALIFORNIA PROPOSITION 65: This product complies with the MSDS and labeling requirements of the Safe Drinking Water and Toxic Enforcement Act of 1986. This product does not contain ingredients listed on California Prop 65 list.

MICHIGAN CRITICAL MATERIALS: This product does not contain ingredient(s) listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW (RTK), Toxic Substance Disclosure, Release Reporting, Spill Reporting and other Hazardous Disclosure Regulations: Chromic Acid and Acetic Acid
Individual State requirements may differ from US federal requirements. Confirm requirements with appropriate State authority.

CANADA: WHMIS (Workplace Hazardous Materials Information System):

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Hazard Classification/Division:

E: Corrosive

D-2A: Material causing other toxic effects (Very Toxic)

Ingredients Disclosure List

Listed

Domestic Substance List:

All components are listed or exempt.



The information listed above does not include all Federal, State, and International regulations. The regulations listed above may change from time to time; it is the users' responsibility to keep advised of current regulatory requirements.

PROD NAME: DIPSQL IZ-250YB
PROD CODE: IZ250YB

Issue Date: 07/28/06
Revised Date: 05/03/16

6 OTHER INFORMATION	
HMIS HAZARD RATINGS	
Health: 3*	Flammability: 0 Physical Hazard: 0 PPE: J
*CHRONIC HEALTH HAZARD Protection = J (Safety goggles, gloves, apron, and dust & vapor respirator)	
Emergency Response Guidebook Number: 153	
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Original Issue Date: July 28, 2006	Revision Date: May 6, 2016