Environmental Act Proposal

1. Executive Summary, Introduction and Background

This report outlines the manufacturing facilities at 1445 Church Ave. Winnipeg, MB, which is known as Cormer Group Industries, (see Appendix A). Cormer Group has been serving the Defense and Aerospace market since 1988. The company specializes in high speed CNC metal machining, mill turning, internal processing, finishing and assembly and post assembly processes. Details of these processes which involved Environmental process are articulated further within this Application.

Cormer Group is Canadian and privately owned and operated and maintains an international presence. The company is headquartered in Winnipeg with two facilities within Inkster Industrial Park along with additional facilities in New Brunswick, Canada and in Queretaro, Mexico.

While headquartered in Winnipeg, Cormer Group Industries also serves North American and international markets.

Cormer Group Industries is ISO 9001: 2008 certified and AS9100 Rev. C certified. Cormer Group Industries is also NADCAP accredited.

We are a registered Controlled Goods Facility and are compliant with ITAR requirements.

We maintain several additional certifications and approvals for special processes issued by our customers and external authorities.

Cormer Group Industries at 1445 Church operates with a day and evening shift from 0600 – 0130, Monday to Friday. The facility does not operate from 0130 until 0600 hours.

Our capabilities 1445 Church include;

- Assembly and Repair and Overhaul of Defense components;
- Warehousing
- Special Processes:
    - CARC line/Paint line - chemical agent resistant coating including Zinc Phosphate and painting;
    - Non Destructive Testing via MPI - magnetic particle Inspection;

We are in compliance with all applicable requirements for processes and have been approved to carry out said processes through detailed work instructions. Cormer Group Industries holds a valid Overstrength Discharge license for our facility issued by the City of Winnipeg of which a renewal application has been submitted, (see Appendix B). Cormer Group Industries also holds an approved Pollution Prevention Plan from the City of Winnipeg (see Appendix C). Cormer Group Industries also holds a valid Hazardous Waste Generator Permit #MBG10067 (see Appendix I).

2. Description of Development

Cormer Group Industries located at 1445 Church operates within a 60,250 square foot facility located on approximately 120,000 square foot lot.

At our 1445 Church location we perform repair and overhaul of military vehicle drive trains. Cormer performs approximately 400 R & O units per year. These are received into our warehouse in a container with receiving documentation. Our R & O department at 1445 Church will tear down the unit, and replace all required parts from existing inventory. Parts replaced include metal parts, rubber seals, hardware, paint, etc. Some metal parts are made by Cormer Group Industries, other parts are purchased parts. Metals used in R & O consist of aluminum alloy and steel. Metal components that are replaced through our repair and overhaul are demilitarized through a melting process at Gerdau MRM Steel, (see Appendix D and E). Other nonmilitary scrap metal is collected and recycled through Chisick Metals.

Chemical waste generated from our Assembly and Repair and Overhaul area is lubricants, degreaser, brake cleaner, oils as well as metal scrap component. Used lubricants/oils are collected and disposed/recycled of by A1 Environmental. Waste water mixed with cleaners, oils, degreasers and lubricants which are generated through our parts washer containers in assembly and R+O process, are collected in totes and disposed of through A1 Environmental, (see appendix G) for recycling. This includes all mop waste water as well generated from floor cleaning which may include oil, lubricant and any other residues.
A total of approximately 20 litres per year is disposed of with lubricants, degreaser, brake cleaner, oils as noted above through rags.
The types of lubricants, degreaser, brake cleaner and oils vary and is not continuously used nor used in high amounts. Less than 5 litres of each is stored on sit at any given time and is ordered on a just in time basis.
About 500 litres per year of waste mop water is disposed/recycled through Miller Environmental or A1 Environmental.

The warehouse also receives raw metal material. The raw metals received are mainly aluminum and aluminum alloys, (99%), and titanium, (1%), and come in form of monolithic blocks, forgings and castings.

Existing Special Processes areas;

- **Magnetic Particle Inspection** - An MPI (Magnetic Particle Inspection) performs NDT testing This Nondestructive process is leveraged only as required which approximately 2 days per week in a separate restricted area in the facility. There are no high use chemicals used in the process although 3 chemicals as noted below are used in very low quantities. Under regular circumstances no potential chemicals are released to the environment from this process. See appendix J – MSDS for all chemicals listed in this document.
    - Magnaglo 14A Powder – usage is approximately 5 kilograms of powder every 2 years.
    - Magnaglo 14A Redi-bath – usage is approximately 12 litres every 2 years
    - Carrier II – usage is approximately 20 litres every 2 years

  *Volumes stored on site are less than the amounts listed above. Chemicals remain in MPI area after use in a catch table basin, (no direct drainage to sewer), and is then disposed of with other chemicals of R & O through Miller Environmental or A1 Environmental.
- **Paint Line (as part of the Zinc Phosphate Line)** – There are 3 manual forced side draft paint booths. Air effluent is monitored using a manometer which determines filter changes and are multi filtered through exhaust systems and evacuated through the roof with no residue or environmental impact. High use/continuous use chemicals with waste levels and methods are listed below. See appendix J – MSDS for all chemicals listed in this document.
    - MIL-DLT-53039C – usage is approximately 48 litres per month or 576 litres per year. Volume stored on site is no greater than a 1 month supply.

- MIL-DLT-53022E – usage is approximately 12 litres per month or 144 litres per year. Volume stored on site is no greater than a 1 month supply.
- MIL-PRF-22750F – usage is approximately 24 litres per month or 288 litres per year. Volume stored on site is no greater than a 1 month supply.

*Waste paint cans are recycled through metal recyclers are noted above.

- **CARC – Chemical Agent Resistant Coating -** A Stage Zinc Phosphate Line consisting of acid wash, rinse, phosphorus, and final rinse tank. High use/continuous use chemicals with waste levels and methods are listed below. No potential vapors are released to the environment from this process. The See appendix J – MSDS for all chemicals listed in this document.
  - Cryscoat FG – usage is approximately 208 litres every 2 months or 1680 litres per year. Volume stored on site is no greater than a 2 month supply.
  - Oakite NRP – usage is approximately 208 litres every 3 months or 832 litres per year. Volume stored on site is no greater than a 3 month supply.
  - Gardoclean S5657 – usage is approximately 208 litres per year. Volume stored on site is no greater than a 1 year supply.
  - Gardolene V5613 – usage is approximately 5 kilograms of powder each year per 250 litres of water. Volume stored on site is no greater than a 1 year supply.
  - Gardolene D6871 – usage is approximately 208 litres per year. Volume stored on site is no greater than a 1 year supply.
  -

*The CARC and Paint line is located within the 1445 Church location. The CARC zinc phosphate line is automated and enclosed (except at entry and exit stage) to contain the processes. CARC line chemicals are filtered through a series of rinse tanks and a resin filter. An additional filter is being installed at the waste water holding tank before being discharged to the sewer.

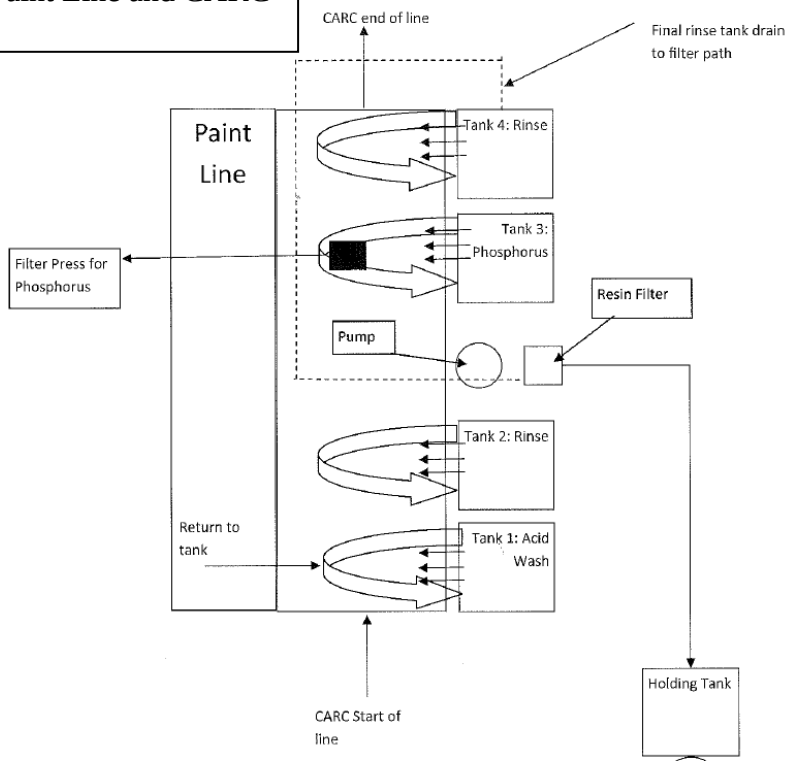
The amounts of discharge to the sewer the filtered liquids as noted above plus approximately 5760 litres of waste water per year.

Please see Overstrength Discharge License and Approved Pollution Prevention Plan in the appendices which apply to the CARC line.

Testing in conducted on this waste disposal each week to ensure compliance.

Full disposal of all chemicals in the CARC line takes place approximately once every 4 years and all chemicals are disposed of through Miller Environmental or A1 Environmental. The disposal amount is approximately 4000 litres per tank (3 tanks) for a total of 12,000 litres. The rinse tank #4 does not require complete dumping as this is filtered through the resin process as noted above. This complete removal of the tanks on the CARC line is not scheduled to take place until late 2016.

Paint Line and CARC



3. Environmental and Human Effects

We have had an overage of Phosphates and Zinc. We have obtained and Overstrength Discharge license for the phosphate overage and have an approved Pollution Prevention Plan in response to the zinc overage. See example of potential environmental impacts.

Parameter	Sewer By-Law Limit (mg/L)	Sample Result (mg/L)	Comments
Aldrin / dieldrin	0.0002	Not Analyzed	
Aluminum (total)	50	0.0232	
Antimony (total)	5	0.00071	
Arsenic (total)	1	0.00092	
Benzene	0.5	Not Analyzed	
Biochemical oxygen demand*	300	Not Analyzed	
Cadmium (total)	0.7	0.000039	
Chlordane (cis plus trans isomers)	0.1	Not Analyzed	
Chromium (hexvalent)	2	Not Analyzed	
Chromium (total)	4	0.0030	
Cobalt (total)	5	0.00085	
Copper (total)	2	0.0191	
Cyanide (total)	2	Not Analyzed	
1,1,2,2 Tetrachloroethane	1.4	Not Analyzed	
1, 2 - dichlorobenzene	0.05	Not Analyzed	
1,4 - dichlorobenzene	0.08	Not Analyzed	
3,3 - dichlorobenzidine	0.002	Not Analyzed	
Dichlorodiphenyltrichloroethane (DDT)	0.0001	Not Analyzed	
Cis - 1, 2 - dichloroethylene	4	Not Analyzed	
Ethyl benzene	0.16	Not Analyzed	
Fluoride	10	6.51	
Hexachlorobenzene	0.0001	Not Analyzed	
Hexachlorocyclohexane (Lindane)	0.1	Not Analyzed	
Lead (total)	1	<0.000090	
Manganese (total)	5	0.0156	
Mercury (total)	0.01	Not Analyzed	
Methylene chloride	2	Not Analyzed	
Mirex	0.1	Not Analyzed	
Molybdenum (total)	5	0.00524	
Nickel (total)	2	0.0082	
Nitrogen (total)*	60	45.2	
Nonylphenols	0.02	Not Analyzed	
Nonylphenol ethoxylates	0.2	Not Analyzed	
Animal or vegetable oil	100	Not Analyzed	
Mineral or synthetic oil	15	Not Analyzed	

Parameter	Sewer By-Law Limit (mg/L)	Sample Result (mg/L)	Comments
Pentachlorophenol (PCP)	0.01	Not Analyzed	
Phenolics (total by 4AAP method)	1	Not Analyzed	
pH	5.5 to 11	6.50	
Phosphorus (total)*	10	53.0	Above By-Law Limit
Polychlorinated biphenyls (PCBs)	0.001	Not Analyzed	
Polycyclic aromatic hydrocarbons (PAHs)	0.005	Not Analyzed	
Selenium (total)	1	<0.0010	
Silver (total)	5	<0.00010	
Sulphate (total)	1500	Not Analyzed	
Sulphide	1	Not Analyzed	
Suspended Solids (total)*	350	Not Analyzed	
Tetrachloroethylene	1	Not Analyzed	
Tin (total)	5	<0.00020	
Titanium (total)	5	0.0639	
Toluene	0.024	Not Analyzed	
Trichloroethylene	0.4	Not Analyzed	
Xylenes (total)	1.4	Not Analyzed	
Zinc (total)	2	0.625	

Notes: * - Discharges exceeding these limits may be eligible for inclusion into the overstrength wastewater discharge program.
** - Detection limit greater then By-law limit due to matrix effects.

We have had an overage of Phosphates and Zinc. We have obtained and Overstrength Discharge license for the phosphate overage and have an approved Pollution Prevention Plan in response to the zinc overage.
Should any spills take place at the site we have Emergency Response protocols along with spill kits, sand kits and berms in place to respond and mitigate should such an incident take place.

Cormer Group Industries complies with all Workplace Health and Safety regulations and safeguards our employees, visitors and community against any health related concerns through communication, training, safe work procedures, work processes, personal protective equipment and restricted accesses to our site. Cormer Group Industries does not generate any negative impact upon humans.

4. Monitoring and Reporting

Records Demonstrating Sewer Discharge Compliance:

The sewer discharge records are controlled and will demonstrate the compliance to the City of Winnipeg by-law # No. 92/2010.

Records Retention:

All records shall be maintained as Per Cormer Process CP – 07. This Procedure defines the methods by which Cormer controls the storage, protection, retention and disposition of all quality records. Environmental records shall be retained for a period of no less than 5 years.

Ongoing Compliance Status Reports:

A summary report shall be submitted to the permitting agency to document the ongoing compliance status. This report shall be prepared annually and made available to the permitting Agency upon request.

5. Land Titles

STATUS OF TITLE

Title Number **2360850/1**
Title Status **Accepted**
Client File BJH

The Property Registry
A Service Provider for the Province of Manitoba

1. REGISTERED OWNERS, TENANCY AND LAND DESCRIPTION

3255212 MANITOBA LTD.

IS REGISTERED OWNER SUBJECT TO SUCH ENTRIES RECORDED HEREON IN THE FOLLOWING DESCRIBED LAND:

SP LOT 1 PLAN 27658 WLTO
IN OTM LOTS 44 AND 45 PARISH OF SAINT JOHN
IN OTM LOTS 1 TO 3 PARISH OF KILDONAN AND CLOSED GRA

The land in this title is, unless the contrary is expressly declared, deemed to be subject to the reservations and restrictions set out in section 58 of *The Real Property Act*.

2. ACTIVE INSTRUMENTS

Instrument Type:	**Caveat**
Registration Number:	**257669/1**
Instrument Status:	**Accepted**
Registration Date:	1978-12-07
From/By:	THE CITY OF WINNIPEG
To:	
Amount:	
Notes:	AFF: PART LOT 1
Description:	No description

Instrument Type:	**Mortgage**
Registration Number:	**3755739/1**
Instrument Status:	**Accepted**
Registration Date:	2009-04-06
From/By:	3255212 MANITOBA LTD.
To:	THE TORONTO-DOMINION BANK
Amount:	$3,060,000.00
Notes:	No notes
Description:	No description

3. ADDRESSES FOR SERVICE

3255212 MANITOBA LTD.
33 BENTALL STREET
WINNIPEG MB
R2X 2Z3

4. TITLE NOTES

No title notes

5. LAND TITLES DISTRICT

Winnipeg

6. DUPLICATE TITLE INFORMATION

Duplicate not produced

7. FROM TITLE NUMBERS

1228410/1 All

8. REAL PROPERTY APPLICATION / CROWN GRANT NUMBERS

No real property application or grant information

9. ORIGINATING INSTRUMENTS

Instrument Type:	**Transfer Of Land**
Registration Number:	**3755738/1**
Registration Date:	2009-04-06
From/By:	PENSIONFUND REALTY LIMITED
To:	3255212 MANITOBA LTD.
Consideration:	$3,060,000.00

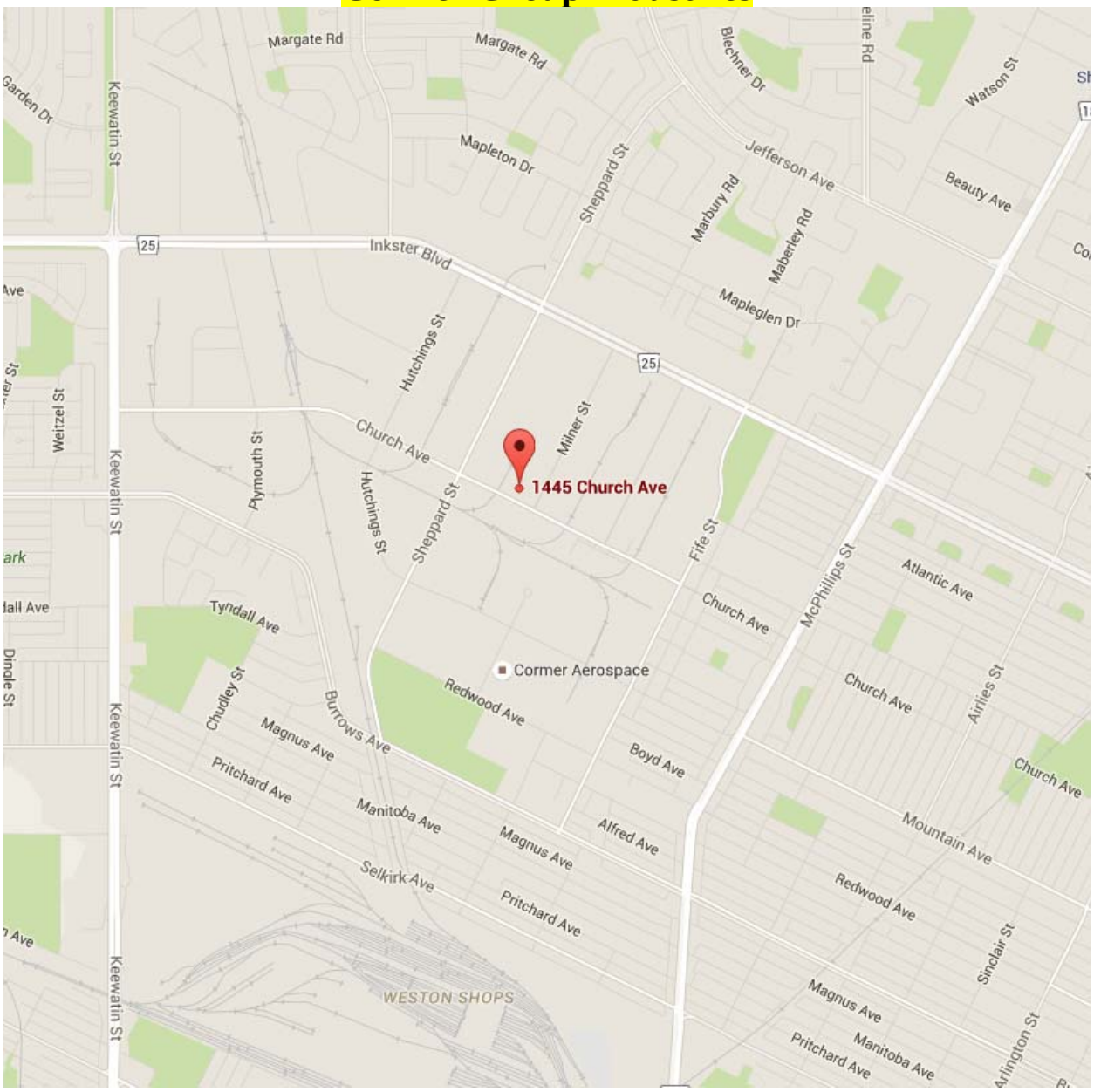
10. LAND INDEX

Lot 1 Plan 27658

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA STORAGE SYSTEM OF TITLE NUMBER 2360850/1

Appendix A

Cormer Group Industries



Appendix B

Winnipeg

Water and Waste Department • Service des eaux et des déchets

2011- 2015 Overstrength Discharge Licence
Sewer By-law No. 92/2010

Company and Contact Information

Company Name: **Cormer Group Industries**
Location: **1445 Church Avenue, Winnipeg MB, R2X 2X9**
Contact: **Mr. David Horvath,**
Phone Number: **(204) 987-6400**
Fax Number: **(204) 988-3808**
Email: **dhorvath@cormeraerospace.com**

Licence Information

File Number: **040-17-03-04-90**
Licence Number: **CORM – 2015**
Date Processed: **February 13, 2014**
Valid Until: **December 31, 2015**

Conditions of Agreement

- **Cormer Group Industries** is granted permission to discharge overstrength wastewater into the **sewer** located at **1445 Church Avenue.**
- The wastewater must not contain any substances set out in Schedule A of By-law 92/2010.
- The wastewater must not exceed the concentration limits for substances set out in Schedule B of By-law 92/2010, except Biochemical oxygen demand, Nitrogen (total), Phosphorus (total), and Suspended solids (total).
- The licence holder must pay any applicable surcharges on substances that exceed the limits set out in Schedule B.
- The licence holder must comply with the conditions specified on this licence and all clauses of the City of Winnipeg Sewer By-law No. 92/2010. See back of licence for reference.
- This Overstrength Discharge Licence is issued for a maximum of **five** calendar years and is renewable annually by January 1st.
- In the event that a licence holder does not meet the requirements of the Overstrength Discharge Licence, the licence shall be subject to suspension or cancellation by the City of Winnipeg.
- This licence may be cancelled or suspended if it is determined that the overstrength wastewater cannot be accommodated and treated within the wastewater system.
- The licence holder must notify the Water and Waste Department of any changes to the information contained in their licence application within ten business days.

Signature: _____ Date: 20 FEB 2014

Mr. David Horvath
Cormer Group Industries

Recommended: _____
Ms. Meghan Marsland
Supervisor
Industrial Waste Services Branch

Approved: _____
Mr. Kelly J. T. Kjartanson, P. Eng
Manager
Environmental Standards Division

2230 Main Street. • 2230, rue Main • Winnipeg • Manitoba R2V 4T8
fax/téléc. 204-339-2147 • winnipeg.ca

Appendix C

Winnipeg

Water and Waste Department • Service des eaux et des déchets

August 14, 2015

SANDRA UNIK
CORMER GROUP DEFENCE
1445 CHURCH AVE
WINNIPEG MB R2X 2X9

Document ID: IWSB-PP-784
NAICS Code: 332810

Sewer By-law No. 92/2010
Pollution Prevention Plan Approved

Dear Sandra Unik:

We have approved the Pollution Prevention Plan for Cormer Group Defence at 1445 Church Ave with the conditions noted below. Your Plan is valid until August 12, 2020.

You are required to:

- renew the Plan at least every five years
- submit progress updates annually using our template
- keep the Plan and all progress updates at the business available for inspection
- notify us of any changes to any of the following within 30 days:
    - processes within your facility
    - pollutants that are present at the facility
    - progress milestone dates as listed in your Plan
    - ownership or contact information of the business

Your first progress update is due August 14, 2016.

Information on Pollution Prevention Planning, including form templates, is available on our website at winnipeg.ca/waterandwaste/sewage/pollutionprevention/

If you have any questions, please contact one of our Pollution Prevention Program Inspectors.

Brett Zastre
Phone: 204-986-8407
Email: BZastre@winnipeg.ca

Jenny Khounnasene
Phone: 204-986-8350
Email: JKhounna@winnipeg.ca

Regards,

for

Meghan Marsland
Industrial Waste Services Branch Head
Environmental Standards Division

2230 Main Street. • 2230, rue Main • Winnipeg, MB • R2V 4T8
fax/téléc. 204 339-2147 • winnipeg.ca

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Appendix D

GERDAU
Manitoba Metallics Raw Materials

To whom it may concern:

This is to certify that all material received from Cormer Industries during the week of May 6th, 2013 has been destroyed by melting the product in the Gerdau steel mill in Selkirk. This material was received and loaded directly into rail cars (Car #'s 62, 37, 14, 23) where it was sent for melting. The details for the loads are:

- First Silver Linings truck arrived in yard at 11:00 am, May 7th with a weight of 20,780lbs. Dumped on to the ground at 11:15 am and sorted into skips. Dumped into railcar 62 at 11:56 and buried with additional scrap. Rail car 62 was processed at the mill May 9th returned empty May 13th.
- Second Silver Linings truck arrived at 2:30 pm, May 7th with a weight of 31,680lbs. Dumped to the ground at 2:45 pm and sorted into bins. Dumped in to railcar 37 at 5:10 pm and then buried with additional scrap. Rail car 37 was processed at the mill May 8th returned empty May 13th.
- Third Silver Linings truck entered yard at 10:05 am, May 8th with a weight of 20,040lbs. Dumped on ground at 10:20 and sorted into skip. Dumped into railcar 14 at 10:50 and buried with additional scrap. Rail car 14 was processed at the mill May 9th returned empty May 12th.
- Fourth Silver linings truck entered yard at 11:00 am, May 9th with a weight of 24,580lbs. Dumped on ground at 11:20 and sorted into skip. Dumped into railcar 23 at 12:30 pm and buried by 1:00 pm. Rail car was processed by the mill May 10th returned May 13th from the Mill empty.

Our sole interest in the material is its value as a raw material in our steel making process. If you have any questions or concerns, please feel free to contact me.

Jason Murphy

Commercial Manager

Gerdau Metallics Raw Materials

Selkirk, Manitoba

P.O. Box 334 - Selkirk - Manitoba - Canada R1A 2B3 - Telephone 204-482-6701 - Direct Wpg. 205-284-1424 - Fax 204-482-8241

Appendix E

National Defence / Défense nationale

Certificate of Demilitarization
Certificat de démilitarisation

Part 1-A – (applicable only to items with a DMC of B or D)
Partie 1-A – (applicable seulement aux articles avec un CDM de B ou D)

Stock code Code de matériel	Quantity Quantité	Demilitarization Method used Méthode utilisée pour la démilitarisation
See Attached List	90	B
See Attached List	13957	D
References applicable to informal/generic demilitarization instructions : Références applicables aux instructions de démilitarisation informelle/générique : Mutilate to preclude restoration to a re-useable state.		
Remarks : Remarque :		

Part 1-B – (applicable only to items with a DMC other than B or D)
Partie 1-B – (applicable seulement aux articles avec un CDM autre que B ou D)

Stock code Code de matériel	Quantity Quantité	Demilitarization Method used Méthode utilisée pour la démilitarisation
See Attached List	6670	A
References applicable to formal/generic demilitarization instructions : Références applicables aux instructions de démilitarisation formelle/générique :		
Remarks : Remarque :		

Part 2 – Signatures
Partie 2 – Signatures

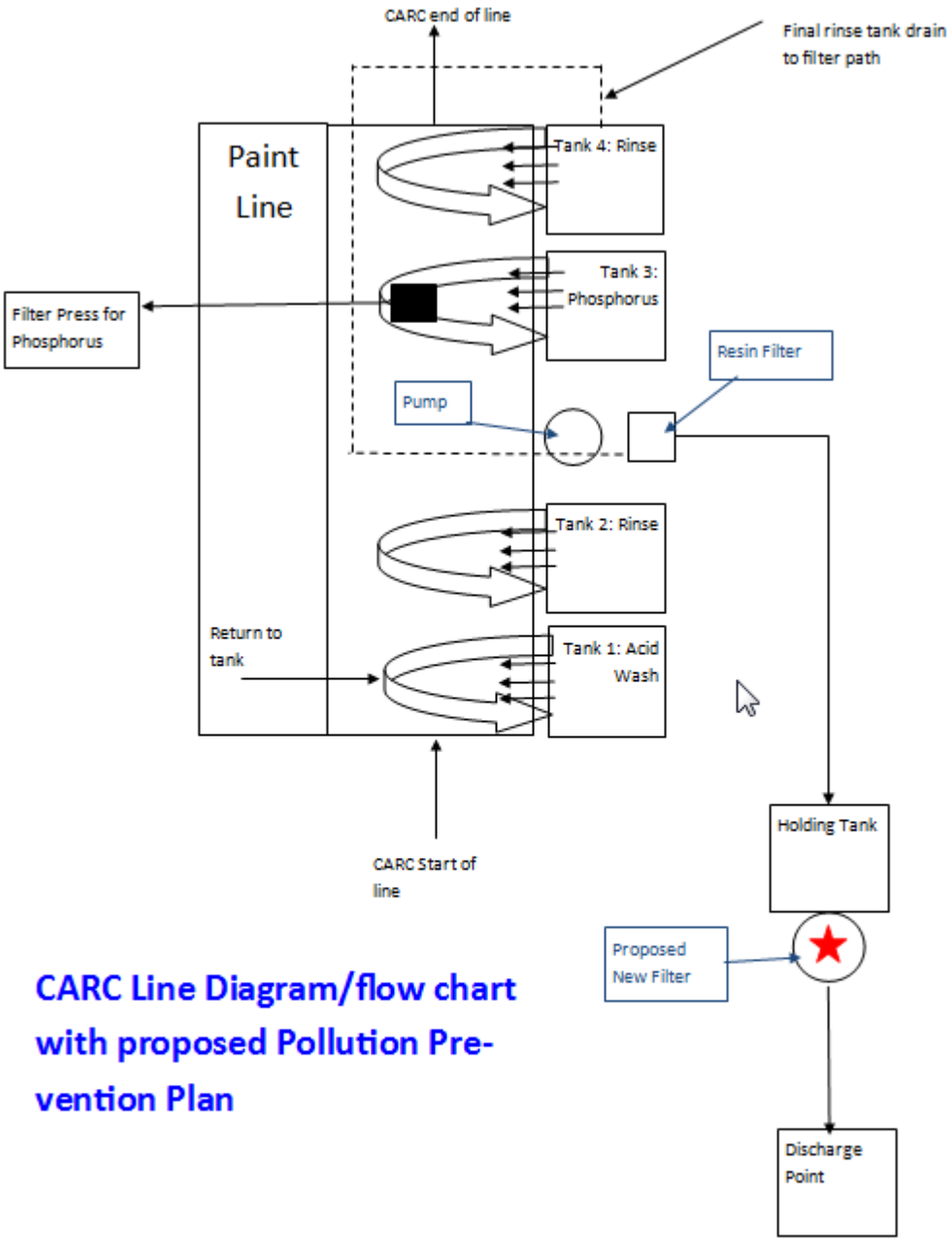
☒ I certify that the above item/items (attached list) was/were demilitarized in accordance with INFORMAL/GENERIC demilitarization instructions or proposed demilitarization method and criteria received or authorized by the item's TA.
Je certifie que l'article/les articles ci-dessus (liste ci-jointe) a/ont été démilitarisé(s) conformément à l'instruction de démilitarisation informelle/générique ou selon la méthode de démilitarisation et les critères proposés qui ont été reçus ou autorisés par l'AT de l'article.

OR

☐ I certify that the above item/items (attached list) was/were demilitarized in accordance with FORMAL/GENERIC demilitarization instructions provided by the item's TA.
Je certifie que l'article/les articles ci-dessus (liste ci-jointe) a/ont été démilitarisé(s) conformément à l'instruction de démilitarisation informelle/générique fournie par l'AT de l'article.

Demilitarization Performed by Démilitarisation accomplie par	Demilitarization Witnessed by Démilitarisation témoignée par
Signature : Signature : D Van Buskirk	Signature : Signature :
Print name : Nom en lettre moulée : Debbie Van Buskirk	Print name : Nom en lettre moulée : S. TAFERNER
Position title : Titre du poste : Program Office	Position title : QAR DND QA Titre du poste :
Organization name : - Nom de l'organisation : Cormer Group Inc.	Organization name : National Defence Quality Assurance Nom de l'organisation : Region -
Date of demilitarization : Date de la démilitarisation : May 7, 8 + 9 2013	Date witnessed : Date témoignée : May 7, 8 & 9, 2013

Appendix F



CARC Line Diagram/flow chart with proposed Pollution Prevention Plan

Appendix G

"Equipped Better to Serve You Better" PO NO. 602689

PH. (204) 237-3681 FAX (204) 233-0790 PH. (204) 233-7682

A-1 Environmental Services

1447 DUGALD ROAD, ST. BONIFACE, MAN. R2J 0H3
OWNED AND OPERATED BY SEPTIC TANK SERVICES (1977) LTD.

DATE July 17 20 15

NAME CORMER Group

ADDRESS 33 Benteau

CITY OR TOWN WPG PROVINCE MB POSTAL CODE

P.O. #	G.S.T. R104784582

DESCRIPTION	$	¢
Septic Tank ☐ Garage Pit ☐ pump out 16 - DRUMS		
Waste Oil ☐		
Others ☑	800	00
Disposal ☐		
CASH ☐ CHEQUE ☐ CHARGE ☒ G.S.T.	40	00
TOTAL	840	00

B- 26452 DRIVER

CUSTOMER'S SIGNATURE

A SERVICE CHARGE OF 2% PER MONTH WILL BE CHARGED
ON ALL OVERDUE ACCOUNTS. TERMS NET 30 DAYS
CUSTOMER'S INVOICE

Appendix H

1445 Church Avenue					
Waste Description					
Physical State	TDG Shipping name	UN Number (PIN)	TDG Class	Packing Group	Provincial waste class code
L	Waste Toxic liquid, inorganic	3287	6.1	II	121,122,123
L	Waste Corrosive liquid N.O.S	1760	8	II	113
S	Waste Corrosive Solids	1759	8	II	114
L	Waste Flammable Liquid	3286	3	II	145
L	Waste Paint	1263	3	II	145
L	MEK	1993	3	II	212
S	Waste Flammable Solid, organic N.O.S - crushed paint cans	1325	4.1	II	212
L	Waste Environmental Hazardous substance, liquid, N.O.S	3082	9	III	252

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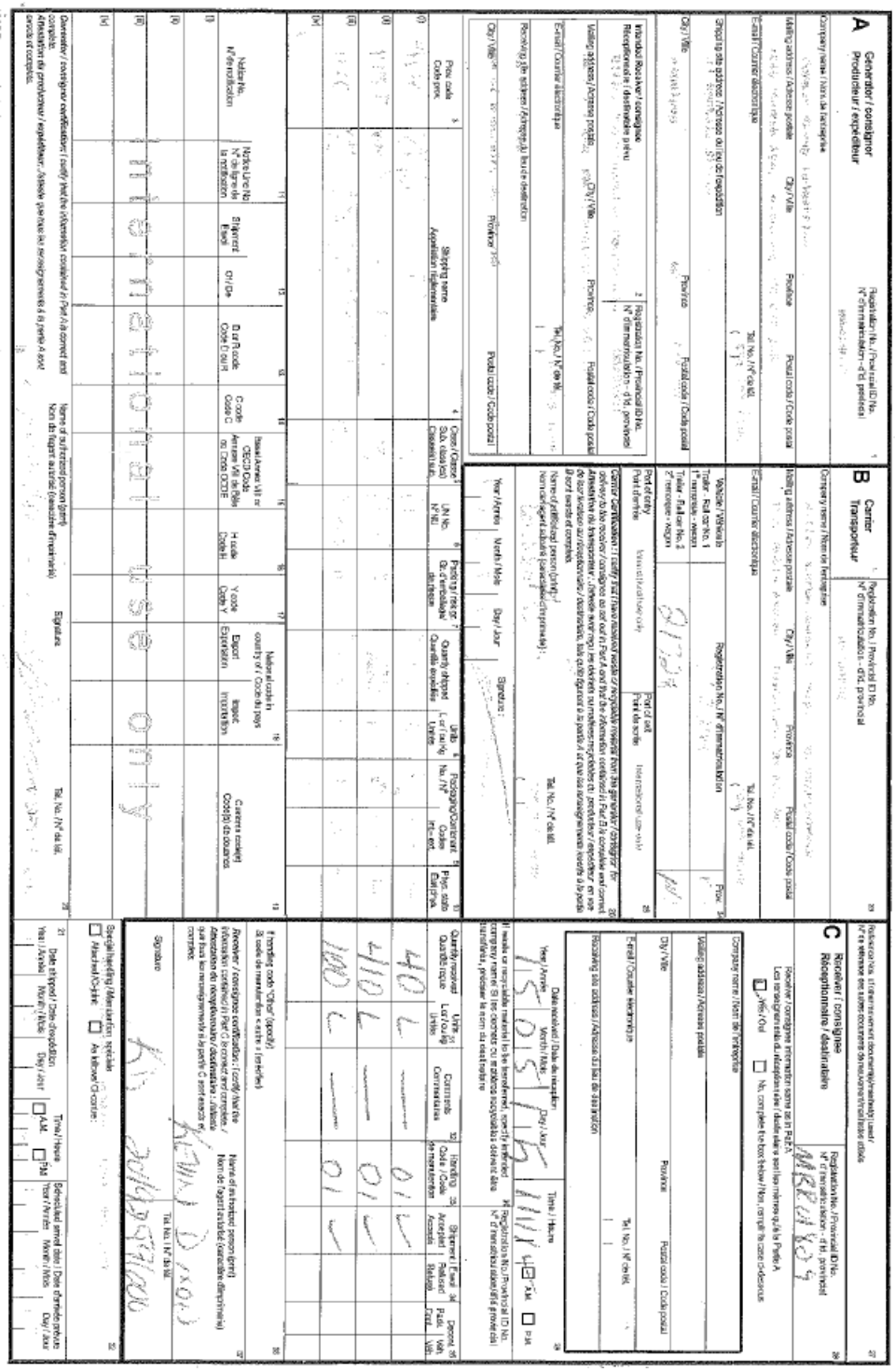
Appendix I

Copy of Hazardous Waste Generator Manifest



Appendix J – MSDS

CARC line

CrysCoat® FG

Version *1.4*
Revision Date 05/22/2015

Print Date 10/04/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	CrysCoat® FG
MSDS Number	:	REL_3600
Company	:	Chemetall Canada, Limited 115 EAST DRIVE BRAMALEA, ON L6T 1B7
Telephone	:	9057911628
Telefax	:	9057911527
MSDS prepared by	:	Health and Environmental Department
Telephone	:	908-464-6900
Emergency telephone no	:	CHEMTREC - 800-424-9300, 1-703-527-3887 (International)
Product Use	:	Surface Pre-treatment material

SECTION 2. HAZARDOUS COMPONENTS INFORMATION

Component	CAS-No.	Weight percent
Gluconic acid	526-95-4	1.00 - 5.00
Zinc dihydrogen phosphate	13598-37-3	10.00 - 20.00
Phosphoric acid	7664-38-2	10.00 - 20.00
Zinc fluoride	7783-49-5	1.00 - 5.00
Zinc nitrate	7779-88-6	5.00 - 10.00

Unidentified ingredients are considered not hazardous under Workplace Hazardous Material Information System (WHMIS).

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview

Form	:	liquid
Colour	:	green
Odour	:	none
Hazard Summary	:	Harmful by inhalation and if swallowed.Causes severe burns.Liquid or vapor causes burns which may be delayed.

Route(s) of Entry :	Inhalation	Skin	Ingestion
	yes	yes	yes

Carcinogenicity:

NTP	No substance in this product is listed by NTP as a carcinogen
IARC	No substance in this product is listed by IARC as a carcinogen.

SECTION 4. FIRST AID MEASURES

Inhalation	:	Move to fresh air. If symptoms persist, call a physician. If breathing is irregular or stopped, administer artificial respiration.
Skin contact	:	Wash off immediately with plenty of water for at least 15 minutes.Take off contaminated clothing and shoes immediately.First treatment with calcium gluconate paste.Call a physician if irritation develops or persists.
Eye contact	:	Rinse immediately with plenty of water for at least 15 minutes.Keep eye wide open while rinsing.Get medical attention immediately
Ingestion	:	Rinse mouth.Drink 1 or 2 glasses of water.Never give anything by mouth to an unconscious person.Get medical attention immediately

SECTION 5. FIREFIGHTING MEASURES

Flash point	:	Note: does not flash
Lower explosion limit	:	Note: Not applicable.
Upper explosion limit	:	Note: Not applicable.
TDG Flammability Class	:	NONE
Suitable extinguishing media	:	Carbon dioxide (CO2) Dry chemical Foam Water spray
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	In the event of fire, cool tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Ensure adequate ventilation.
Methods for cleaning up	:	Ventilate area.

Neutralize with lime milk or soda and flush with plenty of water.
Clean up with inert absorbant material.
Keep in suitable, closed containers for disposal.
Flush with plenty of water.

Additional advice : Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Use only with adequate ventilation.
Add this product to surface of solution slowly to avoid spattering
Do not add large amounts of product to solution at any one time.

Storage

Requirements for storage areas and containers : Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Store indoors in a cool, well-ventilated place

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	ACGIH TLV (TWA)
Gluconic acid	NONE
Zinc dihydrogen phosphate	NONE
Phosphoric acid	1.000000 mg/m3
Zinc fluoride	2.500000 mg/m3 as fluoride
Zinc nitrate	NONE

Eye protection : Chemical resistant goggles must be worn.
Face-shield

Hand protection : Impervious gloves

Skin and body protection : Rubber or plastic apron

Respiratory protection : If the occupational exposure limits cannot be met, suitable respirator equipment shall be worn.

Hygiene measures	:	Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. Wear suitable protective clothing. Wash hands before breaks and immediately after handling the product. Provide adequate ventilation. Do not inhale fumes. Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

pH	:	< 2.5
Freezing point	:	-23 °C (-23 °C)
Boiling point/boiling range	:	Note: no data available
Vapour pressure	:	Note: no data available
Bulk density	:	11.2 lb/gal
Water solubility	:	Note: completely soluble
Partition coefficient: n-octanol/water	:	Note: no data available
Percent of Volatile by Weight excluding water	:	Note: no data available
Relative density	:	1.344
Evaporation rate	:	1 Note: Water = 1

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Heat, flames and sparks. Avoid letting the product become dry.
Materials to avoid	:	Bases Reducing agents Combustible material Organic materials Avoid prolonged contact of concentrate with glass, ceramic, or concrete. Warning! Do not use together with other products. May

release dangerous gases (chlorine).

Hazardous decomposition products	:	Oxides of phosphorus Nitrogen oxides (NOx) Hydrogen, by reaction with metals Traces of Fluorides

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity:	:	Mixture; Not Determined.
Acute oral toxicity		
Zinc dihydrogen phosphate	:	LD50, rat Dose: 1,990.000000 mg/kg
Phosphoric acid	:	LD50, rat Dose: 1,530.000000 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Advice on Disposal	:	Refer to all federal, provincial, state and local regulation prior to disposition of container and unused contents by reuse, recycle or disposal.

SECTION 14. TRANSPORT INFORMATION

Refer to Bill of Lading.

SECTION 15. REGULATORY INFORMATION

DSL Status	:	All components of this material comply with the CANADA Domestic Substances List (DSL) Inventory requirements.
NFPA	:	3 0 0 Corrosive Acid
HMIS	:	3 0 0 J

WHMIS	:	E: Corrosive Material D2B: Toxic Material Causing Other Toxic Effects

SECTION 16. OTHER INFORMATION

Further information

N.D.

Chemetall

Gardoclean® S5657

Version 1.3
Revision Date 11/07/2011

Print Date 05/22/2012

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Gardoclean® S5657
MSDS Number	:	REL_70046
Company	:	Chemetall Canada, Limited 115 EAST DRIVE BRAMALEA, ON L6T 1B7
Telephone	:	9057911628
Telefax	:	9057911527
MSDS prepared by	:	Health and Environmental Department
Telephone	:	908-464-6900
Emergency telephone no.	:	CHEMTREC - 800-424-9300
Product Use	:	Cleaning Compound

SECTION 2. HAZARDOUS COMPONENTS INFORMATION

Component	CAS-No.	Weight percent
Potassium hydroxide	1310-58-3	7.00 - 13.00

Unidentified ingredients are considered not hazardous under Workplace Hazardous Material Information System (WHMIS).

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview

Form	:	liquid
Colour	:	colourless
Odour	:	Bland
Hazard Summary	:	Causes severe burns.Harmful by inhalation and if swallowed.

Route(s) of Entry :	Inhalation	Skin	Ingestion
	yes	yes	yes

Carcinogenicity:

NTP	No substance in this product is listed by NTP as a carcinogen
IARC	No substance in this product is listed by IARC as a carcinogen.

SECTION 4. FIRST AID MEASURES

Inhalation	:	Remove to fresh air. If symptoms persist, call a physician. If breathing is irregular or stopped, administer artificial

respiration.

Skin contact	:	Wash off immediately with plenty of water for at least 15 minutes.Take off contaminated clothing and shoes immediately.Get medical attention immediately if irritation develops and persists
Eye contact	:	Rinse immediately with plenty of water for at least 15 minutes.Keep eye wide open while rinsing.Get medical attention immediately
Ingestion	:	Rinse mouth.Drink plenty of water.Never give anything by mouth to an unconscious person.Get medical attention immediately

SECTION 5. FIRE-FIGHTING MEASURES

Flash point	:	Note: No flash to boiling
Lower explosion limit	:	Note: Not applicable.
Upper explosion limit	:	Note: Not applicable.
Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Foam Water spray
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Ensure adequate ventilation. Material can create slippery conditions.
Methods for cleaning up	:	Ventilate area. Neutralise with acid. Clean up with inert absorbant material. Keep in suitable, closed containers for disposal. Flush with plenty of water.
Additional advice	:	Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Add this product to surface of solution slowly to avoid spattering
Do not add large amounts of product to solution at any one time.
Use only with adequate ventilation.

Storage

Requirements for storage areas and containers : Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Store indoors in a cool, well-ventilated place

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	ACGIH TLV (TWA)
Potassium hydroxide	2 mg/m3 ceiling

Eye protection : Chemical resistant goggles must be worn.
Face-shield

Hand protection : Impervious gloves

Skin and body protection : Rubber or plastic apron

Respiratory protection : If the occupational exposure limits cannot be met, suitable respirator equipment shall be worn.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wear suitable gloves and eye/face protection.
Wear suitable protective clothing.
Wash hands and face before breaks and immediately after handling the product.
Provide adequate ventilation.
Do not inhale fumes.
Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

pH	:	12.5
Freezing point	:	0 °C (0 °C)
Boiling point/boiling range	:	Note: no data available
Vapour pressure	:	23.9 hPa
Bulk density	:	9.46 lb/gal
Water solubility	:	Note: completely soluble
Partition coefficient: n-octanol/water	:	Note: no data available
Percent of Volatile by Weight excluding water	:	0
Relative density	:	1.134
Evaporation rate	:	1 Note: Water = 1

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	freezing Direct sources of heat.
Materials to avoid	:	Acids
Hazardous decomposition products	:	Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity:	:	Mixture; Not Determined.
Acute oral toxicity		
Potassium hydroxide	:	LD50, rat Dose: 365 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Advice on Disposal : Refer to all federal, provincial, state and local regulation prior to disposition of container and unused contents by reuse, recycle or disposal.

SECTION 14. TRANSPORT INFORMATION

Refer to Bill of Lading.

SECTION 15. REGULATORY INFORMATION

DSL Status : All components of this material comply with the CANADA Domestic Substances List (DSL) Inventory requirements.

NFPA : 3 0 0 Corrosive Alkaline

HMIS : 3 0 0 J

WHMIS : E: Corrosive Material
D2B: Toxic Material Causing Other Toxic Effects

SECTION 16. OTHER INFORMATION

Further information

N.D.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Gardolene® D 6871

Substance number : REL_10232

Chemical usage : Surface Pre-treatment material

Manufacturer or supplier's details

Company : Chemetall Canada, Limited

Address : 115 EAST DRIVE
BRAMALEA ON L6T 1B7

Telephone : 9057911628

Telefax : 9057911527

Emergency telephone no : CHEMTREC - 800-424-9300, 1-703-527-3887 (International)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Colour	straw
Odour	mild
Hazard Summary	Combustible material May cause eye irritation May be harmful if swallowed Repeated or prolonged ingestion of Ethanol may cause cancer

GHS Classification

Flammable liquids : Category 4

Carcinogenicity : Category 1A

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements : Combustible liquid.
May cause cancer.

Precautionary statements : **Prevention:**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wear protective gloves/ eye protection/ face protection.
Use personal protective equipment as required.
Response:
IF exposed or concerned: Get medical advice/ attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
Store in a well-ventilated place. Keep cool.
Store locked up.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Inhalation	: no
Skin	: no
Ingestion	: yes
Aggravated Medical Condition	: None known.

Carcinogenicity:

IARC	Group 1: Carcinogenic to humans	
	Ethanol	64-17-5
ACGIH	Confirmed animal carcinogen with unknown relevance to humans	
	Ethanol	64-17-5
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.	

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture :

Hazardous components

Component	CAS-No.	Weight percent

Ethanol	64-17-5	1 - 5

Unidentified ingredients are considered not hazardous under Federal Hazard Communication Standard (29CFR 1910.1200).

Specific chemical identity of composition has been withheld as a trade secret.

Exact percentage of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

If inhaled : Remove to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Wash off with plenty of water.
If skin irritation persists, call a physician.

In case of eye contact : Keep eye wide open while rinsing.
Rinse immediately with plenty of water for at least 15 minutes.
If eye irritation persists, consult a specialist.

If swallowed : Rinse mouth.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO2)
Dry chemical
Foam
Water spray

Further information : Use water spray to cool unopened containers.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation.
Remove all sources of ignition.

Methods and materials for containment and cleaning up : Ventilate area.
Use nonsparking equipment when cleaning up flammable spill.
Clean up with inert absorbant material.
Flush with plenty of water.
Keep in suitable, closed containers for disposal.

Additional advice : Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Unscrew closure slowly. Allow all pressure to escape through threads before removing closure
Use with adequate ventilation.

Conditions for safe storage : Keep containers tightly closed in a cool, well-ventilated place.
KEEP FROM FREEZING

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethanol	64-17-5	TWA	1,000 ppm 1,900.000000 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,900.000000 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,900.000000 mg/m3	OSHA P0
		STEL	1,000 ppm	ACGIH

Personal protective equipment

Respiratory protection : If the occupational exposure limits cannot be met, suitable respirator equipment shall be worn.

Hand protection
Remarks : Impervious gloves

Eye protection : Safety glasses with side-shields

Skin and body protection : Rubber or plastic apron

Hygiene measures : Avoid contact with eyes.
Wear suitable gloves and eye/face protection.
Wear suitable protective clothing.
Wash hands before breaks and immediately after handling the product.
Provide adequate ventilation.
Do not inhale fumes.
Keep away from heat and flame.
Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	straw
Odour	:	mild
pH	:	10.5 - 11.5
Freezing point	:	-4.44 °C
Boiling point/boiling range	:	no data available
Flash point	:	61 °C Method: Tag closed cup
Evaporation rate	:	1 Water = 1
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Relative density	:	1.007
Bulk density	:	8.40 lb/gal
Solubility(ies)		
Water solubility	:	completely soluble
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available
Viscosity, dynamic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Heat, flames and sparks. freezing
Incompatible materials	:	Strong oxidizing agents Acids
Hazardous decomposition products	:	Carbon dioxide (CO2) Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : > 5,000.000000 mg/kg
Method: Calculation method

Components:

Ethanol:
Acute oral toxicity : LD50 rat: 6,200.000000 mg/kg

LD50 rat: 7,060.000000 mg/kg

LDlo Humans: 1,400.000000 mg/kg

Acute inhalation toxicity : LC50 rat: 8,001.000000 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD50 rabbit: 19,999.000000 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Components:

Ethanol:
Result: Eye irritation

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT - single exposure

no data available

STOT - repeated exposure

no data available

Aspiration toxicity

no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

no data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water : Remarks: no data available

Other adverse effects

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Refer to all federal, provincial, state and local regulation prior to disposition of container and unused contents by reuse, recycle or disposal.

SECTION 14. TRANSPORT INFORMATION

International regulation

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

SECTION 15. REGULATORY INFORMATION

TSCA Status : All components of this material comply with US TSCA requirements.

OSHA Hazards : Combustible Liquid, Carcinogen, Moderate eye irritant
WHMIS Classification : B3: Combustible Liquid
D2B: Toxic Material Causing Other Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 311/312 Hazards : Fire Hazard
Chronic Health Hazard
Acute Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Massachusetts Right To Know

Ethanol	64-17-5

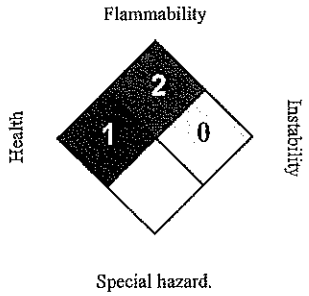
Pennsylvania Right To Know

water	7732-18-5
Ethanol	64-17-5
Trade Secret Registry	735517-5062P
2-Propanol	67-63-0

New Jersey Right To Know

water	7732-18-5
Ethanol	64-17-5
Trade Secret Registry	735517-5062P

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Safety Glasses, Gloves

SECTION 16. OTHER INFORMATION

Further information

Version *1.0*
Revision Date 05/18/2015

Chemetall US, Inc. warrants that the products described herein will conform with its published specifications.

The products supplied by Chemetall and information related to them are intended for use by buyers having necessary industrial skill and knowledge. Buyers should undertake sufficient verification and testing to determine the suitability of the Chemetall materials for their own

particular purpose. Since buyer's conditions of use of products are beyond Chemetall's control, Chemetall does not warrant any recommendations and information for the use of such products. CHEMETALL DISCLAIMS ALL OTHER WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE IN CONNECTION WITH THE USE OF ITS PRODUCTS.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Gardolene® V 6513
Substance number	:	REL_10180
Chemical usage	:	Surface Pre-treatment material

Manufacturer or supplier's details

Company	:	Chemetall Canada, Limited
Address	:	115 EAST DRIVE BRAMALEA ON L6T 1B7
Telephone	:	9057911628
Telefax	:	9057911527
Emergency telephone no	:	CHEMTREC - 800-424-9300, 1-703-527-3887 (International)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	powder
Colour	white
Odour	none
Hazard Summary	Harmful by inhalation and if swallowed. Repeated or prolonged exposure may cause irritation of eyes and skin.

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Potential Health Effects

Inhalation	:	yes
Skin	:	no
Ingestion	:	yes
Aggravated Medical Condition	:	None known.

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

human carcinogen by IARC.

ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture :

Hazardous components

No hazardous ingredients
Unidentified ingredients are considered not hazardous under Federal Hazard Communication Standard (29CFR 1910.1200).

Specific chemical identity of composition has been withheld as a trade secret.

Exact percentage of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

If inhaled	:	Remove person to fresh air. If signs/symptoms continue, get medical attention.
In case of skin contact	:	Flush skin with large amounts of water. If irritation develops and persists, get medical attention.
In case of eye contact	:	Rinse immediately with plenty of water for at least 15 minutes. Keep eye wide open while rinsing. Seek medical advice.
If swallowed	:	Rinse mouth. Drink plenty of water. Obtain medical attention.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up	:	Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.
Additional advice	:	Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Conditions for safe storage	:	Keep containers dry and tightly closed to avoid moisture absorption and contamination. Store indoors in a cool, well-ventilated place Protect from direct contact with water or excessive moisture.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection	:	No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment.
Hand protection Remarks	:	Impervious gloves
Eye protection	:	Safety glasses with side-shields
Hygiene measures	:	Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. Wear suitable protective clothing. Wash hands before breaks and immediately after handling the product. Provide adequate ventilation. Do not inhale fumes. Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	powder
Colour	:	white
Odour	:	none
pH	:	8.0 - 9.0, Concentration: 10.00000 g/l

Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	does not flash
Evaporation rate	:	GLP: No information available.
Upper explosion limit	:	Not applicable.
Lower explosion limit	:	Not applicable.
Vapour pressure	:	no data available
Relative density	:	not applicable
Bulk density	:	50 lb/ft3
Solubility(ies)		
Water solubility	:	completely soluble
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available
Viscosity, dynamic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Exposure to moisture.
Incompatible materials	:	Strong acids
Hazardous decomposition products	:	Oxides of phosphorus Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate : > 5,000.000000 mg/kg Method: Calculation method

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT - single exposure

no data available

STOT - repeated exposure

no data available

Aspiration toxicity

no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

no data available

Other adverse effects

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Refer to all federal, provincial, state and local regulation prior to disposition of container and unused contents by reuse, recycle or disposal.

SECTION 14. TRANSPORT INFORMATION

International regulation

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

SECTION 15. REGULATORY INFORMATION

TSCA Status : All components of this material comply with US TSCA requirements.

OSHA Hazards : Combustible dust
WHMIS Classification : D2B: Toxic Material Causing Other Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Disodium phosphate	7558-79-4	5,000	7,530

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Massachusetts Right To Know

Disodium phosphate	7558-79-4
Trade Secret Registry	735517-5156P

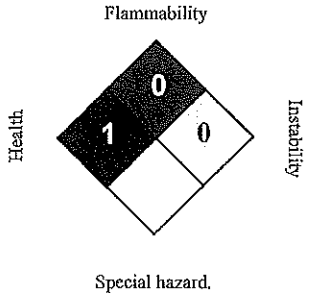
Pennsylvania Right To Know

Disodium phosphate	7558-79-4
Trade Secret Registry	735517-5156P
Trade Secret Registry	735517-5012P

New Jersey Right To Know

Disodium phosphate	7558-79-4
Trade Secret Registry	735517-5156P
Trade Secret Registry	735517-5012P

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Safety Glasses, Gloves

SECTION 16. OTHER INFORMATION

Further information

Version *1.0*
Revision Date 06/01/2015

Chemetall US, Inc. warrants that the products described herein will conform with its published specifications.

The products supplied by Chemetall and information related to them are intended for use by buyers having necessary industrial skill and knowledge. Buyers should undertake sufficient verification and testing to determine the suitability of the Chemetall materials for their own particular purpose. Since buyer's conditions of use of products are beyond Chemetall's control, Chemetall does not warrant any recommendations and information for the use of such products. CHEMETALL DISCLAIMS ALL OTHER WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE IN CONNECTION WITH THE USE OF ITS PRODUCTS.

OAKITE® NRP

Version *1.3*
Revision Date 02/12/2015

Print Date 04/01/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	OAKITE® NRP
MSDS Number	:	REL_4598
Company	:	Chemetall Canada, Limited 115 EAST DRIVE BRAMALEA, ON L6T 1B7
Telephone	:	9057911628
Telefax	:	9057911527
MSDS prepared by	:	Health and Environmental Department
Telephone	:	908-464-6900
Emergency telephone no	:	CHEMTREC - 800-424-9300
Product Use	:	Rust preventive.

SECTION 2. HAZARDOUS COMPONENTS INFORMATION

Component	CAS-No.	Weight percent
Sodium nitrite	7632-00-0	10.00 - 30.00

Unidentified ingredients are considered not hazardous under Workplace Hazardous Material Information System (WHMIS).

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview

Form	:	liquid
Colour	:	light yellow
Odour	:	none
Hazard Summary	:	Harmful by inhalation and if swallowed.Repeated or prolonged exposure may cause irritation of eyes and skin.

Route(s) of Entry :	Inhalation	Skin	Ingestion
	yes	yes	yes

Carcinogenicity:

NTP	No substance in this product is listed by NTP as a carcinogen
IARC	No substance in this product is listed by IARC as a carcinogen.

SECTION 4. FIRST AID MEASURES

Inhalation : Remove person to fresh air. If signs/symptoms continue, get

medical attention.

Skin contact	:	Flush skin with large amounts of water. If irritation develops and persists, get medical attention.
Eye contact	:	Rinse immediately with plenty of water for at least 15 minutes.Keep eye wide open while rinsing.Seek medical advice.
Ingestion	:	Rinse mouth.Drink plenty of water.Obtain medical attention.

SECTION 5. FIREFIGHTING MEASURES

Flash point	:	Note: does not flash
Lower explosion limit	:	Note: Not applicable.
Upper explosion limit	:	Note: Not applicable.
TDG Flammability Class	:	NONE
Suitable extinguishing media	:	Water spray Dry powder Foam Carbon dioxide (CO2)
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	In the event of fire, cool tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Ensure adequate ventilation.
Methods for cleaning up	:	Ventilate area. Clean up with inert absorbant material. Keep in suitable, closed containers for disposal. Flush with plenty of water.
Additional advice	:	Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Use only with adequate ventilation.
Unscrew closure slowly. Allow all pressure to escape through threads before removing closure

Storage

Requirements for storage areas and containers : Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Store indoors in a cool, well-ventilated place
Keep container closed to prevent drying out.
KEEP FROM FREEZING

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	ACGIH TLV (TWA)
Sodium nitrite	NONE

Eye protection : Chemical resistant goggles must be worn.

Hand protection : Impervious gloves

Skin and body protection : Rubber or plastic apron

Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wear suitable gloves and eye/face protection.
Wear suitable protective clothing.
Wash hands and face before breaks and immediately after handling the product.
Provide adequate ventilation.
Do not inhale fumes.
Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

pH : 8.5 - 9.5

Freezing point	:	-2 °C (-2 °C)
Boiling point/boiling range	:	Note: no data available
Vapour pressure	:	Note: no data available
Bulk density	:	9.45 lb/gal
Water solubility	:	Note: completely soluble
Partition coefficient: n-octanol/water	:	Note: no data available
Relative density	:	1.132
Evaporation rate	:	1 Note: Water = 1

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	freezing Avoid letting the product become dry. Direct sources of heat.
Materials to avoid	:	Acids Ammonia Amines Reducing agents Organic materials Combustible material
Hazardous decomposition products	:	Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity:	:	Mixture; Not Determined.
Acute oral toxicity Sodium nitrite	:	LD50, rat Dose: 85.000000 mg/kg

Paint line

MATERIAL SAFETY DATA SHEET

V93V227
09 00

DATE OF PREPARATION
Jul 16, 2015

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
V93V227

PRODUCT NAME
MIL-DTL-53022E 2K EPOXY PRIMER 3.5 VOC CATALYST

MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS CO.
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
20	108-88-3	Toluene		
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 ppm (Skin)	
		OSHA PEL	150 ppm (Skin) STEL	
5	98-56-6	p-Chlorobenzotrifluoride		
		ACGIH TLV	Not Available	5.3 mm
		OSHA PEL	Not Available	
2	71-36-3	1-Butanol		
		ACGIH TLV	20 PPM	5.5 mm
		OSHA PEL	50 ppm (Skin) CEILING	
1	107-98-2	1-Methoxy-2-propanol		
		ACGIH TLV	100 PPM	10.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
4	100-51-6	Phenylmethanol		
		ACGIH TLV	Not Available	0.15 mm
		OSHA PEL	Not Available	
12	78-93-3	Methyl Ethyl Ketone		
		ACGIH TLV	200 PPM	90.6 mm
		ACGIH TLV	300 PPM STEL	
		OSHA PEL	200 PPM	
		OSHA PEL	300 PPM STEL	
16	107-87-9	Methyl n-Propyl Ketone		
		ACGIH TLV	150 PPM STEL	27.8 mm
		OSHA PEL	200 PPM	
		OSHA PEL	250 PPM STEL	
11	110-43-0	Methyl n-Amyl Ketone		
		ACGIH TLV	50 PPM	3.855 mm
		OSHA PEL	100 PPM	
1	90-72-2	Tri(dimethylaminomethyl)phenol		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
4	80-05-7	4,4'-Isopropylidenediphenol		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
4	111-40-0	Diethylenetriamine		
		ACGIH TLV	1 ppm (Skin)	0.37 mm
		OSHA PEL	1 PPM	
4	Proprietary	Polyamide		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
13	Proprietary	Amine Epoxy Adduct		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

EFFECTS OF OVEREXPOSURE

EYES: Causes burns.
SKIN: Causes burns.
INHALATION: Causes burns of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the cardiovascular system
- the nervous system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

HMIS Codes

Health	3*
Flammability	3
Reactivity	0

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
May cause allergic skin reaction in susceptible persons or skin sensitization.
CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention **IMMEDIATELY.**
SKIN: Wash affected area thoroughly with soap and water.
If irritation persists or occurs later, get medical attention.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
21 °F PMCC	0.9	13.7	RED LABEL -- Flammable, Flash below 100 °F (38 °C)

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
DOL Storage Class IB
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.
During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
Use only with adequate ventilation.
Do not get in eyes, or on skin or clothing. Do not breathe vapor or spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION
To prevent eye contact, wear safety spectacles with unperforated sideshields.
OTHER PROTECTIVE EQUIPMENT
Use barrier cream on exposed skin.
OTHER PRECAUTIONS
This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.
Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	7.52 lb/gal	900 g/l
SPECIFIC GRAVITY	0.90	
BOILING POINT	174 - 419 °F	78 - 215 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	80%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

5.59 lb/gal	669 g/l	Less Water and Federally Exempt Solvents
5.39 lb/gal	645 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable
CONDITIONS TO AVOID
None known.
INCOMPATIBILITY
None known.
HAZARDOUS DECOMPOSITION PRODUCTS
By fire: Carbon Dioxide, Carbon Monoxide , Oxides of Nitrogen, possibility of Hydrogen Cyanide
HAZARDOUS POLYMERIZATION
Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS
No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.
Methyl Ethyl Ketone may increase the nervous system effects of other solvents.
Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
108-88-3	Toluene			
		LC50 RAT	4HR	4000 ppm
		LD50 RAT		5000 mg/kg
98-56-6	p-Chlorobenzotrifluoride			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
71-36-3	1-Butanol			
		LC50 RAT	4HR	8000 ppm
		LD50 RAT		790 mg/kg
107-98-2	1-Methoxy-2-propanol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		6600. mg/kg
100-51-6	Phenylmethanol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
78-93-3	Methyl Ethyl Ketone			
		LC50 RAT	4HR	Not Available
		LD50 RAT		2740 mg/kg
107-87-9	Methyl n-Propyl Ketone			
		LC50 RAT	4HR	Not Available
		LD50 RAT		1600 mg/kg
110-43-0	Methyl n-Amyl Ketone			
		LC50 RAT	4HR	Not Available
		LD50 RAT		1670 mg/kg
90-72-2	Tri(dimethylaminomethyl)phenol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		1653 mg/kg
80-05-7	4,4'-Isopropylidenediphenol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3250 mg/kg
111-40-0	Diethylenetriamine			
		LC50 RAT	4HR	Not Available
		LD50 RAT		1080 mg/kg
Proprietary	Polyamide			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
Proprietary	Amine Epoxy Adduct			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

5 Liters (1.3 Gallons) and Less may be Classed as LTD. QTY. (PAINT OR RELATED).
Larger Containers are Regulated as:
UN1263, PAINT, 3, PG II, (ERG#128)

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Toluene 1000 lb RQ

Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, 3, PG II, (ERG#128)

Canada (TDG)
UN1263, PAINT, 3, PG II, LIMITED QUANTITY, (ERG#128)
IMO
5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, 3, PG II, (-6 C c.c.), EmS F-E, S-E
IMO
5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, 3, PG II, (-6 C c.c.), EmS F-E, S-E
IATA/ICAO
UN1263, PAINT, 3, PG II

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	20	
71-36-3	1-Butanol	2	
80-05-7	4,4'-Isopropylidenediphenol	4	

CALIFORNIA PROPOSITION 65
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
TSCA CERTIFICATION
All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

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

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET

F93G105G
01 00

DATE OF PREPARATION
Apr 7, 2014

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
F93G105G
PRODUCT NAME
MIL-DTL-53039C, Type I Aliphatic Polyurethane, Single Component CARC, Green 383, 34094
MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS CO.
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
3	64742-95-6	**Light Aromatic Hydrocarbons**		
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
1	108-67-8	**1,3,5-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
5	95-63-6	**1,2,4-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
18	110-12-3	**Methyl Isoamyl Ketone**		
		ACGIH TLV	50 PPM	4.5 mm
		OSHA PEL	50 PPM	
2	123-86-4	**n-Butyl Acetate**		
		ACGIH TLV	150 PPM	10 mm
		ACGIH TLV	200 PPM STEL	
		OSHA PEL	150 PPM	
		OSHA PEL	200 PPM STEL	
24	28182-81-2	**Hexamethylene Diisocyanate Polymer**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
8	14808-60-7	**Quartz**		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	
8	14464-46-1	**Cristobalite**		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.05 mg/m3 as Resp. Dust	
7	1308-38-9	**Chromium Oxide**		
		ACGIH TLV	0.5 MG/M3	
		OSHA PEL	0.5 MG/M3	
7	68187-49-5	**Cobalt Chromite Green Spinel**		
		ACGIH TLV	0.02 MG/M3	
		OSHA PEL	0.1 MG/M3	

% by Weight	Ingredient
7.52	Chromium III (as Cr)

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2*
Flammability	3
Reactivity	1

EFFECTS OF OVEREXPOSURE

EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the hematopoietic (blood-forming) system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic respiratory and/or skin reaction in susceptible persons or sensitization. This effect may be delayed several hours after exposure.
Persons sensitive to isocyanates will experience increased allergic reaction on repeated exposure.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
If irritation persists or occurs later, get medical attention.
Remove contaminated clothing and launder before re-use.
INHALATION: If any breathing problems occur during use, **LEAVE THE AREA** and get fresh air. If problems remain or occur later, **IMMEDIATELY** get medical attention.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
96 °F TCC	0.7	8.2	RED LABEL -- Flammable, Flash below 100 °F (38 °C)

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.
All personnel in the area should be protected as in Section 8.
Cover spill with absorbent material. Deactivate spilled material with a 10% ammonium hydroxide solution (household ammonia). After 10 minutes, collect in open containers and add more ammonia. Cover loosely. Wash spill area with soap and water.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY

DOL Storage Class IC

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.
During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

NO PERSON SHOULD USE THIS PRODUCT, OR BE IN THE AREA WHERE IT IS BEING USED, IF THEY HAVE CHRONIC (LONG-TERM) LUNG OR BREATHING PROBLEMS OR IF THEY EVER HAD A REACTION TO ISOCYANATES.

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

Where overspray is present, a positive pressure air supplied respirator (TC19C NIOSH/MSHA approved) should be worn. If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2 may be effective. Follow respirator manufacturers directions for use. Wear the respirator for the whole time of spraying and until all vapors and mists are gone. **NO PERSONS SHOULD BE ALLOWED IN THE AREA WHERE THIS PRODUCT IS BEING USED UNLESS EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.**

When sanding, wirebrushing, abrading, burning or welding the dried film, wear a particulate respirator approved by NIOSH/MSHA for protection against non-volatile materials in Section 2.

PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	10.72 lb/gal	1284 g/l
SPECIFIC GRAVITY	1.29	
BOILING POINT	255 - 360 °F	123 - 182 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	47%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

3.32 lb/gal	398 g/l	Less Water and Federally Exempt Solvents
3.32 lb/gal	398 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

Contamination with Water, Alcohols, Amines and other compounds which react with isocyanates, may result in dangerous pressure in, and possible bursting of, closed containers.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide , Oxides of Metals in Section 2

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Cobalt and cobalt compounds are classified by IARC as possibly carcinogenic to humans (group 2B) based on experimental animal data, however, there is inadequate evidence in humans for its carcinogenicity.

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.

Chromium III is considered the active species in cancer induction, but Chromium III compounds do not cross the cell wall. However, there is some evidence that Chromium III compounds of respirable particle size may be taken up by the cells in the lung.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-95-6	**Light Aromatic Hydrocarbons**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
108-67-8	**1,3,5-Trimethylbenzene**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
95-63-6	**1,2,4-Trimethylbenzene**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
110-12-3	**Methyl Isoamyl Ketone**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3200 mg/kg
123-86-4	**n-Butyl Acetate**			
		LC50 RAT	4HR	2000 ppm
		LD50 RAT		13100 mg/kg
28182-81-2	**Hexamethylene Diisocyanate Polymer**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
14808-60-7	**Quartz**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
14464-46-1	**Cristobalite**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
1308-38-9	**Chromium Oxide**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
68187-49-5	**Cobalt Chromite Green Spinel**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
Waste must be tested for ignitability and extractability to determine the applicable EPA hazardous waste numbers.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

5 Liters (1.3 Gallons) and Less may be Classed as LTD. QTY. OR ORM-D
Larger Containers are Regulated as:
UN1263, PAINT, 3, PG III, (ERG#128)

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, 3, PG III, (ERG#128)

Canada (TDG)

UN1263, PAINT, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (36 C c.c.), EmS F-E, S-E

IATA/ICAO

UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
95-63-6	1,2,4-Trimethylbenzene	5	
	Chromium Compound	13	7.5
	Cobalt Compound	7	1.0
	Zinc Compound	7	1.4

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

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

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET

N12V100
08 00

DATE OF PREPARATION
Sep 26, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
N12V100
PRODUCT NAME
MIL-PRF-22750F Coating, Epoxy, High-Solids (Part B), Hardener
MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	(800) 524-5979
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
26	67-63-0	**2-Propanol**		
		ACGIH TLV	200 PPM	33 mm
		ACGIH TLV	400 PPM STEL	
		OSHA PEL	400 PPM	
45	84852-15-3	**4-Nonylphenol**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
22	1477-55-0	**1,3-Benzenedimethanamine**		
		ACGIH TLV	0.1 ppm (Skin) CEILING	
		OSHA PEL	0.1 ppm (Skin) CEILING	
7	Proprietary	**Polyamine**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	3*
Flammability	3
Reactivity	0

EFFECTS OF OVEREXPOSURE
EYES: Causes burns.
SKIN: Causes burns.
INHALATION: Causes burns of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
May cause allergic skin reaction in susceptible persons or skin sensitization.

CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention **IMMEDIATELY**.
SKIN: Wash affected area thoroughly with soap and water.
If irritation persists or occurs later, get medical attention.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
53 °F PMCC	2.0	12.7	RED LABEL -- Flammable, Flash below 100 °F (38 °C)

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
DOL Storage Class IB
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.
During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
Use only with adequate ventilation.
Do not get in eyes, or on skin or clothing. Do not breathe vapor or spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.
EYE PROTECTION
To prevent eye contact, wear safety spectacles with unperforated sideshields.
OTHER PROTECTIVE EQUIPMENT
Use barrier cream on exposed skin.

OTHER PRECAUTIONS

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	7.82 lb/gal	936 g/l
SPECIFIC GRAVITY	0.94	
BOILING POINT	178 - 181 °F	81 - 82 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	30%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

1.99 lb/gal	239 g/l	Less Water and Federally Exempt Solvents
1.99 lb/gal	239 g/l	Emitted VOC

VOLATILE ORGANIC COMPOUNDS (VOC - As Applied)

<2.83 lb/gal	<340 g/l	Less Water and Federally Exempt Solvents

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
67-63-0	2-Propanol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		5045 mg/kg
84852-15-3	4-Nonylphenol			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
1477-55-0	1,3-Benzenedimethanamine			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
Proprietary	Polyamine			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

UN2924, FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (ISOPROPYL ALCOHOL, MODIFIED CYCLOALIPHATIC POLYAMINES), 3 (8), PG II, (ERG#132)

Bulk Containers may be Shipped as:

UN2924, FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (ISOPROPYL ALCOHOL, MODIFIED CYCLOALIPHATIC POLYAMINES), 3 (8), PG II, (ERG#132)

Canada (TDG)

UN2924, FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (ISOPROPYL ALCOHOL, MODIFIED CYCLOALIPHATIC POLYAMINES), CLASS 3 (8), PG II, (ERG#132)

IMO

1 Liter (1.1 Quarts) and Less may be Shipped as Limited Quantity.
UN2924, FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (ISOPROPYL ALCOHOL, MODIFIED CYCLOALIPHATIC POLYAMINES), CLASS 3, (8), PG II, MARINE POLLUTANT, (12 C c.c.), (4-NONYLPHENOL, BRANCHED), EmS F-E, S-C, ADR (D/E)

IATA/ICAO

UN2924, FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (ISOPROPYL ALCOHOL, MODIFIED CYCLOALIPHATIC POLYAMINES), 3, PG II, 8

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element

No ingredients in this product are subject to SARA 313 (40 CFR 372.65C) Supplier Notification.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

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

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MPI

Section 1: IDENTIFICATION

1.1 PRODUCT IDENTIFIER

Product Name: 14A

Product Code: Not available.

1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Use: Non-Destructive Testing.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Name/Address: Magnaflux 155 Harlem Avenue, Glenview, Illinois 60025

Telephone Number: 847-657-5300

1.4 EMERGENCY TELEPHONE NUMBER

Emergency Telephone Number: CHEMTREC 800-424-9300

Date of Preparation: November 25, 2013 **Version #:** 1.0

Section 2: HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012

Hazard class

Serious eye irritation 2A

2.2 LABEL ELEMENTS

Hazard Pictogram:

Signal Word: Warning

Hazard Statement: Causes serious eye irritation.

Prevention: Wash hands thoroughly after handling. Wear eye protection/face protection.

Response: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: Not applicable.

Disposal: Not applicable.

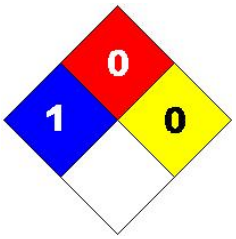
2.3 ADDITIONAL INFORMATION

Hazards not otherwise classified: Not applicable.

30 % of the mixture consists of ingredient(s) of unknown acute toxicity.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

Mexico Classification:



Blue = Health Red = Flammability Yellow = Reactivity White = Special

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

WHMIS Classification(s):

Class D2A - Chronic Toxic Effects
Class D2B - Eye Irritant

WHMIS Hazard Symbols:

WHMIS Signal Word: WARNING

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 MIXTURES

Ingredient	UN #	H / F/ R / *	CAS No	Wt. %
1-Naphthalenecarboxaldehyde, 2-hydroxy-, [(2-hydroxy-1-naphthalenyl)methylene]hydrazone	Not available.	Not available.	2387-03-3	10 - 30
Fatty acids, C18-unsaturated, dimers, polymer with ethylenediamine and tall-oil fatty acids	Not available.	Not available.	68139-80-0	7 - 13
Manganese, elemental	UN3089	1/2/2	7439-96-5	0.66-3.32

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

* Per NOM-018-STPS-2000

Section 4: FIRST- AID MEASURES

4.1 DESCRIPTION OF THE FIRST AID MEASURE

Eye: In case of contact, immediately flush eyes with plenty of water for at

	least 15 minutes, including under lids. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
Skin:	If irritation occurs, flush skin with plenty of water. Call a physician if irritation persists.
Inhalation:	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
Ingestion:	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Eye:	Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Skin:	Not normally a hazard. May cause slight skin irritation in sensitive individuals.
Inhalation:	Not a normal route of exposure. May cause respiratory tract irritation.
Ingestion:	Not normally a hazard. May be harmful if swallowed in large quantities.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

Note to Physicians:	Symptoms may not appear immediately.
Specific Treatments:	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Section 5: FIRE-FIGHTING MEASURES

5.1 FLAMMABILITY

Flammability: Not flammable by WHMIS/OSHA/NOM-018-STPS-2000 criteria.

5.2 EXTINGUISHING MEDIA

Suitable Extinguishing Media: Treat for surrounding material.

Unsuitable Extinguishing Media: Not available.

5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

Products of Combustion: May include, and are not limited to: oxides of carbon and oxides of nitrogen.

Explosion Data:

Sensitivity to Mechanical Impact: Not available.

Sensitivity to Static Discharge: Not available.

5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

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

6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

Methods for Containment: Contain and/or absorb spill with inert material, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Cleaning-Up: Vacuum or sweep material and place in a disposal container.

Section 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Handling: Avoid contact with skin and eyes. Do not swallow. Avoid generating and breathing dust. Good housekeeping is important to prevent accumulation of dust. Handle and open container with care. Handle in well-ventilated areas. When using do not eat, drink or smoke. (See section 8)

General Hygiene Advice: Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage: Keep out of the reach of children. Keep container tightly closed and dry. (See section 10)

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

Exposure Guidelines

Occupational Exposure Limits		
Ingredient	**OSHA-PEL**	**ACGIH-TLV**
1-Naphthalenecarboxaldehyde, 2-hydroxy-, [(2-hydroxy-1-naphthalenyl)methylene]hydrazone	Not available.	Not available.
Fatty acids, C18-unsaturated, dimers, polymer with ethylenediamine and tall-oil fatty acids	Not available.	Not available.
Manganese, elemental	1 mg/m^3	0.02 mg/m^3 (respirable fraction) 0.1 mg/m^3 (inhalable fraction)

8.2 EXPOSURE CONTROLS

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

8.3 INDIVIDUAL PROTECTIVE MEASURES

Personal Protective Equipment:

Eye/Face Protection: Safety glasses or goggles are recommended when using product.

Skin Protection:

Hand Protection: Chemical-resistant gloves.

Body Protection:	Use personal protective equipment as required.
Respiratory Protection:	In case of insufficient ventilation, wear suitable respiratory equipment. 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.
General Health and Safety Measures:	Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Wash contaminated clothing before reusing.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Brown powder.
Color:	Brown.
Odor:	Odorless.
Odor Threshold:	Not available.
Physical State:	Solid.
pH:	Neutral.
Melting Point/Freezing Point:	Not available.
Initial Boiling Point and Boiling Range:	Not applicable.
Flash Point:	None.
Evaporation Rate:	Not applicable.
Flammability:	Not flammable.
Lower Flammability/Explosive Limit:	None.
Upper Flammability/Explosive Limit:	None.
Vapor Pressure:	Not applicable.
Vapor Density:	Not applicable.
Relative Density/Specific Gravity:	0.5 (bulk)
Solubility:	Insoluble.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Oxidizing Properties:	Not available.
Explosive Properties:	Not available.

Section 10: STABILITY AND REACTIVITY

10.1 REACTIVITY

No dangerous reaction known under conditions of normal use.

10.2 CHEMICAL STABILITY

Stable under normal storage conditions.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

10.4 CONDITIONS TO AVOID

Heat. Incompatible materials.

10.5 INCOMPATIBLE MATERIALS

Acids.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon and oxides of nitrogen.

Section 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Likely Routes of Exposure: Skin contact, eye contact, inhalation, and ingestion.

Symptoms related to physical/chemical/toxicological characteristics:

Eye: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Skin: Not normally a hazard. May cause slight skin irritation in sensitive individuals.

Ingestion: Not normally a hazard. May be harmful if swallowed in large quantities.

Inhalation: Not a normal route of exposure. May cause respiratory tract irritation.

Acute Toxicity:

Ingredient	IDLH	LC50	LD50
1-Naphthalenecarboxaldehyde, 2-hydroxy-, [(2-hydroxy-1-naphthalenyl)methylene]hydrazone	Not available.	Not available.	Not available.
Fatty acids, C18-unsaturated, dimers, polymer with ethylenediamine and tall-oil fatty acids	Not available.	Not available.	Not available.
Manganese, elemental	500 mg/m^3 (Mn)	Not available.	Oral >9000 mg/kg, rat

Calculated overall Chemical Acute Toxicity Values		
LC50 (inhalation)	**LD50 (oral)**	**LD50 (dermal)**
Not available.	> 2000 mg/kg, rat	Not available.

Ingredient	Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*

1-Naphthalenecarboxaldehyde, 2-hydroxy-, [(2-hydroxy-1-naphthalenyl)methylene]hydrazone	Not listed.
Fatty acids, C18-unsaturated, dimers, polymer with ethylenediamine and tall-oil fatty acids	Not listed.
Manganese, elemental	G-A5

* See Section 15 for more information.

11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin Corrosion/Irritation: Based on available data, the classification criteria are not met.

Serious Eye Damage/Irritation: Causes serious eye irritation.

Respiratory Sensitization: Based on available data, the classification criteria are not met.

Skin Sensitization: Based on available data, the classification criteria are not met.

STOT-Single Exposure: Based on available data, the classification criteria are not met.

Chronic Health Effects:

Carcinogenicity: Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity:

Developmental: Based on available data, the classification criteria are not met.

Teratogenicity: Based on available data, the classification criteria are not met.

Embryotoxicity: Based on available data, the classification criteria are not met.

Fertility: Based on available data, the classification criteria are not met.

STOT-Repeated Exposure: Based on available data, the classification criteria are not met.

Aspiration Hazard: Based on available data, the classification criteria are not met.

Toxicologically Synergistic Materials: Not available.

Other Information: Not available.

Section 12: ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

Acute/Chronic Toxicity: May cause long-term adverse effects in the aquatic environment.

12.2 PERSISTENCE AND DEGRADABILITY

Not available.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Not available.

12.4 MOBILITY IN SOIL

Not available.

12.5 OTHER ADVERSE EFFECTS

Not available.

Section 13: DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Disposal Method:	This material must be disposed of in accordance with all local, state, provincial, and federal regulations.
Other disposal recommendations:	Not available.

Section 14: TRANSPORT INFORMATION

14.1 UN NUMBER

DOT	TDG	NOM-004-SCT2-1994
Not regulated.	Not regulated.	Not regulated.

14.2 UN PROPER SHIPPING NAME

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.3 TRANSPORT HAZARD CLASS (ES)

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.4 PACKING GROUP

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.5 ENVIRONMENTAL HAZARDS

Not available.

14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

14.7 SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood.

Section 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

Canada: 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.

US: MSDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Mexico: MSDS prepared pursuant to NOM-018-STPS-2000.

SARA Title III				
Ingredient	**Section 302 (EHS) TPQ (lbs.)**	**Section 304 EHS RQ (lbs.)**	**CERCLA RQ (lbs.)**	**Section 313**
1-Naphthalenecarboxaldehyde, 2-hydroxy-, [(2-hydroxy-1-naphthalenyl)methylene]hydrazone	Not listed.	Not listed.	Not listed.	Not listed.
Fatty acids, C18-unsaturated, dimers, polymer with ethylenediamine and tall-oil fatty acids	Not listed.	Not listed.	Not listed.	Not listed.
Manganese, elemental	Not listed.	Not listed.	Not listed.	313

State Regulations

California Proposition 65:

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Global Inventories:

Ingredient	**Canada DSL/NDSL**	**USA TSCA**
1-Naphthalenecarboxaldehyde, 2-hydroxy-, [(2-hydroxy-1-naphthalenyl)methylene]hydrazone	DSL	Yes.
Fatty acids, C18-unsaturated, dimers, polymer with ethylenediamine and tall-oil fatty acids	DSL	Yes.
Manganese, elemental	DSL	Yes.

NFPA-National Fire Protection Association:	
Health:	1
Fire:	0
Reactivity:	0

HMIS-Hazardous Materials Identification System:	
Health:	1*
Fire:	0
Physical Hazard:	0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

CP65 **California Proposition 65**

OSHA (O) **Occupational Safety and Health Administration.**

ACGIH (G) **American Conference of Governmental Industrial Hygienists.**
A1 - Confirmed human carcinogen.
A2 - Suspected human carcinogen.
A3 - Animal carcinogen.
A4 - Not classifiable as a human carcinogen.
A5 - Not suspected as a human carcinogen.

IARC (I) **International Agency for Research on Cancer.**
1 - The agent (mixture) is carcinogenic to humans.
2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N) **National Toxicology Program.**
1 - Known to be carcinogens.
2 - Reasonably anticipated to be carcinogens.

Section 16: OTHER INFORMATION

Date of Preparation:	November 25, 2013
Expiry Date:	November 25, 2016
Version:	1.0
Revision Date:	November 25, 2013

Conforms to OSHA HazCom 2012, CPR & NOM-018-STPS-2000 Standards

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

Prepared by: Nexreg Compliance Inc.
Phone: (519) 488-5126
www.nexreg.com

Prepared for: Magnaflux

End of Safety Data Sheet

Section 1: IDENTIFICATION

1.1 PRODUCT IDENTIFIER

Product Name: 14A Redi-Bath

Product Code: Not available.

1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Use: Non-Destructive Testing.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Name/Address: Magnaflux 155 Harlem Avenue, Glenview, Illinois 60025

Telephone Number: 847-657-5300

1.4 EMERGENCY TELEPHONE NUMBER

Emergency Telephone Number: CHEMTREC 800-424-9300

Date of Preparation: October 7, 2014 **Version #:** 1.0

Section 2: HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012

Hazard class

Skin irritation 2
Serious eye damage1
Reproductive toxicity 1B

2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012

Hazard Pictogram:

Signal Word: Danger

Hazard Statement: Causes skin irritation. Causes serious eye damage. May damage fertility or the unborn child.

Prevention: Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/ eye protection/face protection.

Response: If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.

Storage: Store locked up.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

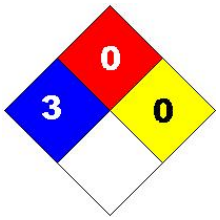
2.3 ADDITIONAL INFORMATION

Hazards not otherwise classified: Not applicable.

8 % of the mixture consists of ingredient(s) of unknown acute toxicity.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

Mexico Classification:



Blue = Health Red = Flammability Yellow = Reactivity White = Special

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

WHMIS Classification(s):

Class D2A - Reproductive Toxicity
Class D2B - Skin/Eye Irritant

WHMIS Hazard Symbols:

WHMIS Signal Word: WARNING

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 MIXTURES

Ingredient	UN #	H / F/ R / *	CAS No	Wt. %
Monoethanolamine	UN2491	3/2/0	141-43-5	5 - 10
Dimethyl glutarate	Not available.	Not available.	1119-40-0	3 - 7
Triethanolamine	Not available.	Not available.	102-71-6	3 - 7
Alcohols, C6-10, ethoxylated propoxylated	Not available.	Not available.	68987-81-5	3 - 7
Boric acid	Not available.	Not available.	10043-35-3	1 - 5
Etidronic acid	Not available.	Not available.	2809-21-4	1 - 5
Dimethyl succinate	Not available.	Not available.	106-65-0	1 - 5
Dimethyl adipate	Not available.	Not available.	627-93-0	1 - 5
2-Amino-2-methylpropanol	Not available.	Not available.	124-68-5	0.5 - 1.5
2-Hydroxynaphthalene-1-carbaldehyde [(2-hydroxy-1-naphthyl)methylene]hydrazone	Not available.	Not available.	2387-03-3	0.5 - 1.5
Manganese, elemental	Not available.	1/2/2	7439-96-5	0.1 - 1
Ethylene oxide	UN1040	3/4/3	75-21-8	< 0.1
1,4-Dioxane	UN1165	2/3/1	123-91-1	< 0.1

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

* Per NOM-018-STPS-2000

Section 4: FIRST- AID MEASURES

4.1 DESCRIPTION OF THE FIRST AID MEASURE

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

Skin: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

Inhalation: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Ingestion: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Eye: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Skin: Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Inhalation: May cause respiratory tract irritation. Inhalation of vapors formed during heating may cause drowsiness, dizziness, and nausea.

Ingestion: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

Note to Physicians: Symptoms may not appear immediately.

Specific Treatments: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Section 5: FIRE-FIGHTING MEASURES

5.1 FLAMMABILITY

Flammability: Not flammable by WHMIS/OSHA/NOM-018-STPS-2000 criteria.

5.2 EXTINGUISHING MEDIA

Suitable Extinguishing Media: Treat for surrounding material.

Unsuitable Extinguishing Media: None known.

5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

Products of Combustion: May include, and are not limited to: oxides of carbon.

Explosion Data:

Sensitivity to Mechanical Impact: Not available.

Sensitivity to Static Discharge: Not available.

5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

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

6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

Methods for Containment: Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Cleaning-Up: Scoop up material and place in a disposal container. Provide ventilation.

Section 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Handling: Do not get in eyes, on skin, or on clothing. Avoid breathing dust/fume/ gas/mist/vapors/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. (See section 8)

General Hygiene Advice: Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage: Keep out of the reach of children. Keep container tightly closed. Store locked up. Keep away from incompatible materials. (See section 10)

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

Exposure Guidelines

Occupational Exposure Limits		
Ingredient	**OSHA-PEL**	**ACGIH-TLV**
Monoethanolamine	3 ppm	3 ppm
Dimethyl glutarate	Not available.	Not available.
Triethanolamine	Not available.	5 mg/m³
Alcohols, C6-10, ethoxylated propoxylated	Not available.	Not available.
Boric acid	Not available.	2 mg/m^3
Etidronic acid	Not available.	Not available.
Dimethyl succinate	Not available.	Not available.
Dimethyl adipate	Not available.	Not available.
2-Amino-2-methylpropanol	Not available.	Not available.

2-Hydroxynaphthalene-1-carbaldehyde [(2-hydroxy-1-naphthyl)methylene]hydrazone	Not available.	Not available.
Manganese, elemental	1 mg/m^3 (fume)	0.02 mg/m^3 (respirable fraction) 0.1 mg/m^3 (inhalable fraction)
Ethylene oxide	1 ppm	1 ppm
1,4-Dioxane	100 ppm	20 ppm

8.2 EXPOSURE CONTROLS

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

8.3 INDIVIDUAL PROTECTIVE MEASURES

Personal Protective Equipment:

Eye/Face Protection: Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).

Skin Protection:

Hand Protection: Wear chemical resistant gloves.

Body Protection: Wear suitable protective clothing.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. 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.

General Health and Safety Measures: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Not available.

Color: Not available.

Odor: Not available.

Odor Threshold: Not available.

Physical State: Liquid.

pH: Not available.

Melting Point/Freezing Point: Not available.

Initial Boiling Point and Boiling Range: Not available.

Flash Point: Not available.

Evaporation Rate: Not available.

Flammability: Not flammable.

Lower Flammability/Explosive Limit: Not available.

Upper Flammability/Explosive Limit: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Relative Density/Specific Gravity:	Not available.
Solubility:	Not available.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Oxidizing Properties:	Not available.
Explosive Properties:	Not available.

Section 10: STABILITY AND REACTIVITY

10.1 REACTIVITY

No dangerous reaction known under conditions of normal use.

10.2 CHEMICAL STABILITY

Stable under normal storage conditions.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

10.4 CONDITIONS TO AVOID

Heat. Incompatible materials.

10.5 INCOMPATIBLE MATERIALS

Strong oxidizing agents. Strong reducing agents. Strong alkalis. Nitrites.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Likely Routes of Exposure: Skin contact, eye contact, inhalation, and ingestion.

Symptoms related to physical/chemical/toxicological characteristics:

Eye: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Skin: Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Ingestion: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

Inhalation: May cause respiratory tract irritation. Inhalation of vapors formed during heating may cause drowsiness, dizziness, and nausea.

Acute Toxicity:

Ingredient	IDLH	LC50	LD50
Monoethanolamine	30 ppm	Not available.	Oral 1720 mg/kg, rat
Dimethyl glutarate	Not available.	Not available.	Oral 8191 mg/kg, rat

			Dermal >2000 mg/kg, rabbit
Triethanolamine	Not available.	Not available.	Oral 4190 mg/kg, rat Dermal >20 mL/kg, rabbit
Alcohols, C6-10, ethoxylated propoxylated	Not available.	Not available.	Not available.
Boric acid	Not available.	Not available.	Oral 2660 mg/kg, rat Dermal >2000 mg/kg, rabbit
Etidronic acid	Not available.	Not available.	Oral 2400 mg/kg, rat Dermal >7940 mg/kg, rabbit
Dimethyl succinate	Not available.	Not available.	Oral >5000 mg/kg, rat Dermal >5 g/kg, rabbit
Dimethyl adipate	Not available.	Not available.	Oral > 5000 mg/kg, rat Dermal > 2000 mg/kg, rabbit
2-Amino-2-methylpropanol	Not available.	Not available.	Oral 2900 mg/kg, rat Dermal >2000 mg/kg, rabbit
2-Hydroxynaphthalene-1-carbaldehyde [(2-hydroxy-1-naphthyl)methylene]hydrazone	Not available.	Not available.	Not available.
Manganese, elemental	500 mg/m^3 (as Mn)	Inhalation > 5.14 mg/L 4 h, rat	Oral > 2000 mg/kg, rat
Ethylene oxide	Ca [800 ppm]	Inhalation 800 ppm 4 h, rat	Oral 72 mg/kg, rat
1,4-Dioxane	Ca [500 ppm]	Inhalation 48.5 mg/L 4 h, rat	Oral 4200 mg/kg, rat Dermal 7600 mg/kg, rabbit

Calculated overall Chemical Acute Toxicity Values		
LC50 (inhalation)	**LD50 (oral)**	**LD50 (dermal)**
Not available.	> 2000 mg/kg, rat	> 2000 mg/kg, rabbit

Ingredient	**Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)***
Monoethanolamine	Not listed.
Dimethyl glutarate	Not listed.
Triethanolamine	I-3
Alcohols, C6-10, ethoxylated propoxylated	Not listed.
Boric acid	G-A4
Etidronic acid	Not listed.
Dimethyl succinate	Not listed.
Dimethyl adipate	Not listed.
2-Amino-2-methylpropanol	Not listed.
2-Hydroxynaphthalene-1-carbaldehyde [(2-hydroxy-1-naphthyl)methylene]hydrazone	Not listed.
Manganese, elemental	G-A4
Ethylene oxide	O, G-A2, I-1, N-1, CP65
1,4-Dioxane	G-A3, I-2B, N-2, CP65

* See Section 15 for more information.

11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin Corrosion/Irritation: Causes skin irritation.

Serious Eye Damage/Irritation: Causes serious eye damage.

Respiratory Sensitization: Based on available data, the classification criteria are not met.

Skin Sensitization:	Based on available data, the classification criteria are not met.
STOT-Single Exposure:	Based on available data, the classification criteria are not met.
Chronic Health Effects:	
Carcinogenicity:	Based on available data, the classification criteria are not met.
Germ Cell Mutagenicity:	Based on available data, the classification criteria are not met.
Reproductive Toxicity:	
Developmental:	May damage the unborn child.
Teratogenicity:	Based on available data, the classification criteria are not met.
Embryotoxicity:	Based on available data, the classification criteria are not met.
Fertility:	May damage fertility.
STOT-Repeated Exposure:	Based on available data, the classification criteria are not met.
Aspiration Hazard:	Based on available data, the classification criteria are not met.
Toxicologically Synergistic Materials:	Not available.
Other Information:	Not available.

Section 12: ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

Acute/Chronic Toxicity: May cause long-term adverse effects in the aquatic environment.

12.2 PERSISTENCE AND DEGRADABILITY

Not available.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Not available.

12.4 MOBILITY IN SOIL

Not available.

12.5 OTHER ADVERSE EFFECTS

Not available.

Section 13: DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Disposal Method:	This material must be disposed of in accordance with all local, state, provincial, and federal regulations.
Other disposal recommendations:	Not available.

Section 14: TRANSPORT INFORMATION

14.1 UN NUMBER

DOT	TDG	NOM-004-SCT2-1994
Not regulated.	Not regulated.	Not regulated.

14.2 UN PROPER SHIPPING NAME

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.3 TRANSPORT HAZARD CLASS (ES)

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.4 PACKING GROUP

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.5 ENVIRONMENTAL HAZARDS

Not available.

14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

14.7 SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood.

Section 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

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

US: SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Mexico: SDS prepared pursuant to NOM-018-STPS-2000.

SARA Title III				
Ingredient	**Section 302 (EHS) TPQ (lbs.)**	**Section 304 EHS RQ (lbs.)**	**CERCLA RQ (lbs.)**	**Section 313**
Monoethanolamine	Not listed.	Not listed.	Not listed.	Not listed.
Dimethyl glutarate	Not listed.	Not listed.	Not listed.	Not listed.
Triethanolamine	Not listed.	Not listed.	Not listed.	Not listed.
Alcohols, C6-10, ethoxylated propoxylated	Not listed.	Not listed.	Not listed.	Not listed.
Boric acid	Not listed.	Not listed.	Not listed.	Not listed.
Etidronic acid	Not listed.	Not listed.	Not listed.	Not listed.
Dimethyl succinate	Not listed.	Not listed.	Not listed.	Not listed.

Dimethyl adipate	Not listed.	Not listed.	Not listed.	Not listed.
2-Amino-2-methylpropanol	Not listed.	Not listed.	Not listed.	Not listed.
2-Hydroxynaphthalene-1-carbaldehyde [(2-hydroxy-1-naphthyl)methylene]hydrazone	Not listed.	Not listed.	Not listed.	Not listed.
Manganese, elemental	Not listed.	Not listed.	Not listed.	313
Ethylene oxide	1,000	10	10	313
1,4-Dioxane	Not listed.	Not listed.	100	313

State Regulations

California Proposition 65:

This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Global Inventories:

Ingredient	Canada DSL/NDSL	USA TSCA
Monoethanolamine	DSL	Yes.
Dimethyl glutarate	DSL	Yes.
Triethanolamine	DSL	Yes.
Alcohols, C6-10, ethoxylated propoxylated	NDSL	Yes.
Boric acid	DSL	Yes.
Etidronic acid	DSL	Yes.
Dimethyl succinate	DSL	Yes.
Dimethyl adipate	DSL	Yes.
2-Amino-2-methylpropanol	DSL	Yes.
2-Hydroxynaphthalene-1-carbaldehyde [(2-hydroxy-1-naphthyl)methylene]hydrazone	DSL	Yes.
Manganese, elemental	DSL	Yes.
Ethylene oxide	DSL	Yes.
1,4-Dioxane	DSL	Yes.

NFPA-National Fire Protection Association:	
Health:	3
Fire:	0
Reactivity:	0

HMIS-Hazardous Materials Identification System:	
Health:	3*
Fire:	0
Physical Hazard:	0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

CP65 **California Proposition 65**

OSHA (O) **Occupational Safety and Health Administration.**

ACGIH (G) **American Conference of Governmental Industrial Hygienists.**
A1 - Confirmed human carcinogen.
A2 - Suspected human carcinogen.
A3 - Animal carcinogen.
A4 - Not classifiable as a human carcinogen.
A5 - Not suspected as a human carcinogen.

IARC (I) **International Agency for Research on Cancer.**
1 - The agent (mixture) is carcinogenic to humans.
2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N) **National Toxicology Program.**
1 - Known to be carcinogens.
2 - Reasonably anticipated to be carcinogens.

Section 16: OTHER INFORMATION

Date of Preparation: October 7, 2014

Expiry Date: October 7, 2017

Version: 1.0

Revision Date: October 7, 2014

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

Prepared by: Nexreg Compliance Inc.
Phone: (519) 488-5126
www.nexreg.com

Prepared for: Magnaflux

End of Safety Data Sheet

SAFETY DATA SHEET

Section 1: IDENTIFICATION

1.1 PRODUCT IDENTIFIER

Product Name: Carrier II

Product Code: Not available.

1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Use: Non-Destructive Testing

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Name/Address: Magnaflux
155 Harlem Avenue,
Glenview, Illinois
60025

Telephone Number: 847-657-5300

1.4 EMERGENCY TELEPHONE NUMBER

Emergency Telephone Number: CHEMTREC 800-424-9300

Date of Preparation: June 18, 2014 **Version #:** 1.1

Section 2: HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012

Hazard class

Aspiration Hazard 1

2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012

Hazard Pictogram:

Signal Word: Danger

Hazard Statement: May be fatal if swallowed and enters airways.

Prevention: Not applicable.

Response: If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting.

Storage: Store locked up.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

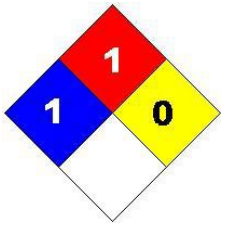
SAFETY DATA SHEET

2.3 ADDITIONAL INFORMATION

Hazards not otherwise classified: Not applicable.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

Mexico Classification:



Blue = Health Red = Flammability Yellow = Reactivity White = Special

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

WHMIS Classification(s):
Not Controlled.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 MIXTURES

Ingredient	UN #	H / F/ R / *	CAS No	Wt. %
White mineral oil, petroleum	Not available.	Not available.	8042-47-5	60 - 100

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

* Per NOM-018-STPS-2000

Section 4: FIRST- AID MEASURES

4.1 DESCRIPTION OF THE FIRST AID MEASURE

Eye: In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.

Skin: In case of contact, immediately flush skin with plenty of water. Call a physician if irritation develops and persists.

Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Ingestion: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Eye: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Skin: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Inhalation: May cause respiratory tract irritation.

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Ingestion: May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

Note to Physicians: Symptoms may not appear immediately.

Specific Treatments: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Section 5: FIRE-FIGHTING MEASURES

5.1 FLAMMABILITY

Flammability: This product is not flammable by WHMIS/OSHA/NOM-018-STPS-2000 criteria.

5.2 EXTINGUISHING MEDIA

Suitable Extinguishing Media: Dry chemical, carbon dioxide, water fog, foam, sand / earth.

Unsuitable Extinguishing Media: Do not use water jet.

5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

Products of Combustion: May include, and are not limited to: oxides of carbon.

Explosion Data:

Sensitivity to Mechanical Impact: Not available.

Sensitivity to Static Discharge: Not available.

5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Water can be used to keep fire-exposed containers cool. If water is used, fog nozzles are preferred. Oil will float on water and can spread the fire.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

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

6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

Methods for Containment: Stop spill at source and dike the area. Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Cleaning-Up: Scoop up material and place in a disposal container. Spills of this material are a slipping hazard.

Section 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Handling: Do not handle at temperatures above 40 °C / 104 °F, unless wearing appropriate protective equipment. Avoid contact with skin and eyes. Avoid breathing vapor or mist. Do not swallow. Handle and open container with

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care. When using do not eat, drink or smoke. (See section 8)

General Hygiene Advice: Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage: Keep locked up and out of reach of children. Keep container tightly closed. Do not store at temperatures above 40 °C / 104 °F. Protect from light. (See section 10)

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

Exposure Guidelines

Occupational Exposure Limits		
Ingredient	**OSHA-PEL**	**ACGIH-TLV**
White mineral oil, petroleum	5 mg/m^3 (mist)	5 mg/m^3 (mist)

8.2 EXPOSURE CONTROLS

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

8.3 INDIVIDUAL PROTECTIVE MEASURES

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses or goggles to protect from splashes.

Skin Protection:

Hand Protection: For prolonged contact, use nitrile or neoprene gloves or other material resistant to petroleum oils.

Body Protection: Wear suitable protective clothing.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. 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.

General Health and Safety Measures: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Oily.

Color: Pale yellow.

Odor: Mild petroleum.

Odor Threshold: Not available.

Physical State: Liquid.

pH: Not available.

Melting Point/Freezing Point: Not available.

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Initial Boiling Point and Boiling Range:	> 230 °C (> 446 °F)
Flash Point:	> 93.3 °C (> 200 °F)
Evaporation Rate:	Not available.
Flammability:	Not flammable.
Lower Flammability/Explosive Limit:	Not available.
Upper Flammability/Explosive Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density/Specific Gravity:	Not available.
Solubility:	Insoluble.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	2.2 - 2.9 cSt
Oxidizing Properties:	Not available.
Explosive Properties:	Not available.
VOC content:	29.2%

Section 10: STABILITY AND REACTIVITY

10.1 REACTIVITY

No dangerous reaction known under conditions of normal use.

10.2 CHEMICAL STABILITY

Stable under normal storage conditions.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

10.4 CONDITIONS TO AVOID

Heat. Incompatible materials. Direct sunlight.

10.5 INCOMPATIBLE MATERIALS

Strong oxidizing agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Likely Routes of Exposure: Skin contact, eye contact, inhalation, and ingestion.

Symptoms related to physical/chemical/toxicological characteristics:

Eye: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

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Skin: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Ingestion: May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

Inhalation: May cause respiratory tract irritation.

Acute Toxicity:

Ingredient	IDLH	LC50	LD50
White mineral oil, petroleum	Not available.	Inhalation > 5 mg/L 4h, rat	Oral >5000 mg/kg, rat; Dermal >2000 mg/kg, rabbit

Calculated overall Chemical Acute Toxicity Values		
LC50 (inhalation)	**LD50 (oral)**	**LD50 (dermal)**
Not available.	> 2000 mg/kg, rat	> 2000 mg/kg, rabbit

Ingredient	Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*
White mineral oil, petroleum	Not listed.

* See Section 15 for more information.

11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin Corrosion/Irritation: Based on available data, the classification criteria are not met.

Serious Eye Damage/Irritation: Based on available data, the classification criteria are not met.

Respiratory Sensitization: Based on available data, the classification criteria are not met.

Skin Sensitization: Based on available data, the classification criteria are not met.

STOT-Single Exposure: Based on available data, the classification criteria are not met.

Chronic Health Effects:

Carcinogenicity: Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity:

Developmental: Based on available data, the classification criteria are not met.

Teratogenicity: Based on available data, the classification criteria are not met.

Embryotoxicity: Based on available data, the classification criteria are not met.

Fertility: Based on available data, the classification criteria are not met.

STOT-Repeated Exposure: Based on available data, the classification criteria are not met.

Aspiration Hazard: May be fatal if swallowed and enters airways.

Toxicologically Synergistic Materials: Not available.

Other Information: Not available.

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Section 12: ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

Acute/Chronic Toxicity: May cause long-term adverse effects in the aquatic environment.

12.2 PERSISTENCE AND DEGRADABILITY

Not available.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Not available.

12.4 MOBILITY IN SOIL

Not available.

12.5 OTHER ADVERSE EFFECTS

Not available.

Section 13: DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Disposal Method: This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

Other disposal recommendations: Not available.

Section 14: TRANSPORT INFORMATION

14.1 UN NUMBER

DOT	TDG	NOM-004-SCT2-1994
Not regulated.	Not regulated.	Not regulated.

14.2 UN PROPER SHIPPING NAME

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.3 TRANSPORT HAZARD CLASS (ES)

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.4 PACKING GROUP

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

14.5 ENVIRONMENTAL HAZARDS

Not available.

14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

14.7 SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood.

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Section 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

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

US: SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Mexico: SDS prepared pursuant to NOM-018-STPS-2000.

SARA Title III				
Ingredient	**Section 302 (EHS) TPQ (lbs.)**	**Section 304 EHS RQ (lbs.)**	**CERCLA RQ (lbs.)**	**Section 313**
White mineral oil, petroleum	Not listed.	Not listed.	Not listed.	Not listed.

State Regulations

California Proposition 65:

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Global Inventories:

Ingredient	Canada DSL/NDSL	USA TSCA
White mineral oil, petroleum	DSL	Yes.

NFPA-National Fire Protection Association:	
Health:	1
Fire:	1
Reactivity:	0

HMIS-Hazardous Materials Identification System:	
Health:	1
Fire:	1
Physical Hazard:	0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

CP65 **California Proposition 65**

OSHA (O) **Occupational Safety and Health Administration.**

ACGIH (G) **American Conference of Governmental Industrial Hygienists.**
A1 - Confirmed human carcinogen.
A2 - Suspected human carcinogen.
A3 - Animal carcinogen.
A4 - Not classifiable as a human carcinogen.
A5 - Not suspected as a human carcinogen.

IARC (I) **International Agency for Research on Cancer.**
1 - The agent (mixture) is carcinogenic to humans.
2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

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2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N) **National Toxicology Program.**
1 - Known to be carcinogens.
2 - Reasonably anticipated to be carcinogens.

Section 16: OTHER INFORMATION

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End of Safety Data Sheet