

Seattle Galvanizing Company, Inc.
Notice of Construction Application for Order of Approval
for
Spin Hot-Dip Galvanizing Line
at
18520 67th Avenue NE, Arlington, Washington

This Notice of Construction Application for Order of Approval submittal consists of several documents, listed below:

- A. Notice of Construction Application for Order of Approval (Form 50-125P)
- B. NOC Application Supplemental Forms
 - a. BAGHOUSES AND CARTRIDGE-TYPE DUST COLLECTORS
- C. Project Description and Process Flow Diagrams
- D. Vendor and Manufacturer Information
- E. Emissions Calculations Summary and Safety Data Sheets
- F. State Environmental Policy Act (SEPA) Checklist

Questions or requests for additional information can be directed to:

Marie E. Piper

Cascade Environmental Management

316 SE Pioneer Way, #294

Oak Harbor, WA 98277

(360) 672-0088

MarieatCascade@gmail.com

Hadi Mirzai

Seattle Galvanizing Company, Inc.

19603 60th Ave NE

Arlington, WA 98223

(206) 783-3100 EXT 104

hadi@seattlegalvanizing.com

Date submitted to Puget Sound Clean Air Agency: January 10, 2024



Appendix A

Notice of Construction Application for Order of Approval (Form 50-125P)



**PUGET SOUND
Clean Air Agency**

AGENCY USE ONLY	NOC#:	REG#:	Date Fee Pd:	Eng. Assigned:
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1904 3rd Ave #105, Seattle, WA 98101

206-343-8800

pscleanair.gov

NOTICE OF CONSTRUCTION APPLICATION FOR ORDER OF APPROVAL

The following information must be submitted as part of this application packet before an Agency engineer is assigned to review your project.

SECTION 1: FACILITY INFORMATION

Business Name Seattle Galvanizing Company, Inc.				
Equipment Installation Address 18520 67th Avenue NE		City Arlington	State WA	Zip 98223
Is the business registered with the Agency at this equipment installation address? Yes. Current Registration or AOP No. _____ <input checked="" type="checkbox"/> No, not registered Unknown				
Business Owner Name Seattle Galvanizing Company, Inc.				
Business Mailing Address 18520 67th Avenue NE		City Arlington	State WA	Zip 98223
Type of Business Hot-dip galvanizing; bonding (alloying) of zinc onto fabricated iron or steel by the immersion of the iron or steel into molten zinc.				
Is the installation address located within the city limits? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
NAICS Code 332812		NAICS Description Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturer		
Contact Name (for this application) Hadi Mirzai		Phone 206-783-3100	Email hadi@seattlegalvanizing.com	
Description for Agency Website Provide a 1-2 sentence simple description of this project. See examples www.pscleanair.gov/176 Construction of a new hot-dip spin galvanizing facility including a small parts hot-dip galvanizing tank line and baghouse for pollution control.				

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS

- 1) **Process flow diagram**
 YES, attached. NO, not attached. This application is incomplete
- 2) **Emission estimate.** Emission rate increases for all pollutants.
 YES, attached. NO, not attached. This application is incomplete.
- 3) **Environmental Checklist** (or a determination made by another Agency under the State Environmental Policy Act) www.pscleanair.gov/DocumentCenter/View/170
 YES, attached. NO, not attached. This application is incomplete.

NOTICE OF CONSTRUCTION APPLICATION FOR ORDER OF APPROVAL

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS (CONT)

4) Attach **equipment form(s)** applicable to your operation. Forms are available online at www.pscleanair.gov/179
 X YES, attached. NO, not attached. This application is incomplete.

5) **Detailed Project Description**

The project description must include a detailed description of the project, a list of process and control equipment to be installed or modified, a description of how the proposed project will impact your existing operations (if applicable), and measures that will be taken to minimize air emissions.

Detailed description of the proposed project included in packet?

X YES, attached. NO, not attached. This application is incomplete.

6) **\$3,000 filing fee** (nonrefundable)

PAY BY CHECK – Attached and made payable to **Puget Sound Clean Air Agency**

PAY BY CREDIT – Accounting technician will contact person identified below for payment information

Contact Name: Nazani Mirzai	Contact Number: (206) 783-3100 ext 103
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SECTION 3: PROCESS AND CONTROL EQUIPMENT (attach additional pages if necessary)

Process Equipment		Does this equipment have air pollution control equipment?	Air Pollution Control Equipment	
# of Units	Equipment Type & Design Capacity		# of Units	Equipment Type
1	Hot-Dip Spin Galvanizing Line	X Yes No	1	Baghouse
		Yes No		
		Yes No		
		Yes No		

SECTION 4: CERTIFICATION STATEMENT

I, the undersigned, certify that the information contained in this application and the accompanying forms, plans, specifications, and supplemental data described herein is, to the best of my knowledge, accurate and complete.



 Signature
 Hadi Mirzai

 Printed Name

1-9-2024

 Date
 President

 Title

SECTION 5: APPLICATION SUBMITTAL

EMAIL application and attachments to:

NOC@psccleanair.gov

-OR-

MAIL application, payment, and attachments to:

Puget Sound Clean Air Agency
 ATTN: NOC Application Submittal
 1904 3rd Ave, Suite 105 – Seattle, WA 98101

Appendix B
NOC Application Supplemental Forms
BAGHOUSES AND CARTRIDGE-TYPE DUST COLLECTORS



NOC APPLICATION SUPPLEMENTAL FORM

Baghouse, Cartridge-Type Dust Collector, and Fabric Filter

This baghouse or cartridge-type dust collector is:

- New (including existing, unpermitted equipment)
- A replacement of an existing baghouse or cartridge-type dust collector
- A substantial alteration of an existing baghouse or cartridge-type dust collector
- Relocation

Specify the source of the particulate matter being controlled: _____

Hours of operation per day: _____ Hours of operation per year: _____

Inlet Gas Stream Characteristics

Inlet Flowrate (acfm): _____

Inlet Particulate Concentration (gr/dscf): _____

Temperature Range of Inlet Gas Stream (°F): _____

Moisture Range of Inlet Gas Stream (%): _____

Outlet Gas Stream Characteristics

Outlet Flowrate (acfm): _____

Outlet Particulate Concentration (gr/dscf): _____

Temperature Range of Outlet Gas Stream (°F): _____

Moisture Range of Outlet Gas Stream (%): _____

Baghouse, Cartridge-Type Dust Collector, and Fabric Filter

Design Specifications

Make: _____ Model: _____

Filter Fabric Material: _____

Filter Cleaning Method:

- Mechanically shaken
- Manually shaken
- Reverse air
- Pulse-jet
- Other: _____

Air to Cloth Ratio (acfm/ft²): _____

Baghouse Fan Configuration

- Induced draft
- Forced draft
- Other: _____

Stack Parameters

Exhaust stack parameters (Leave blank for non-ventilated spray areas):

Stack diameter (inches): _____ Stack height above ground (feet): _____

Building Dimensions of project location:

Building Height (highest point of roof) (feet): _____

Building Width (feet): _____ Building Length (feet) _____

Stack damper/rain guard:

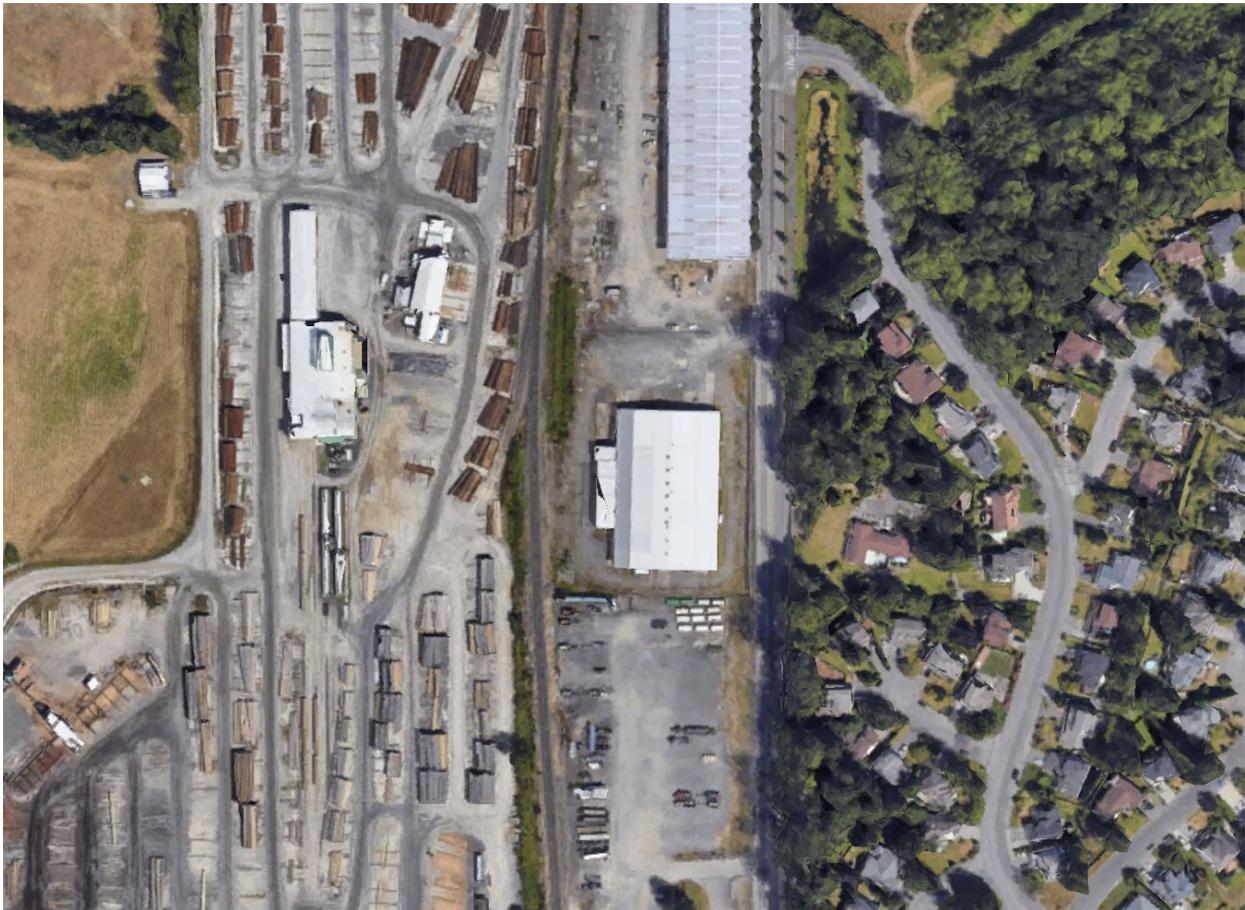
- None Hexagonal Stack within stack Butterfly Inverted Cone
- Other (specify): _____

Appendix C
Project Description and Process Flow Diagrams

Introduction

Seattle Galvanizing Company, Inc. is proposing a small parts spin galvanizing line to be located within an industrial building located at 18520 67th Avenue NE, Arlington, Washington. The project site is approximately 2.5 acres in size and is currently zoned General Industrial and is located within the Cascade Industrial Center. The parcel is located to the West of 67th Avenue NE and south of 188th Street NE. There are train tracks on the west side of the property with the Baxter pole facility located west of the tracks. Other industrial facilities are located to the north and south. A residential neighborhood is located to the east. The proposed facility will occupy roughly half of the interior of the existing building. The remaining area will be used for storage.

An aerial view of the site and a site vicinity map are provided below:





VICINITY MAP

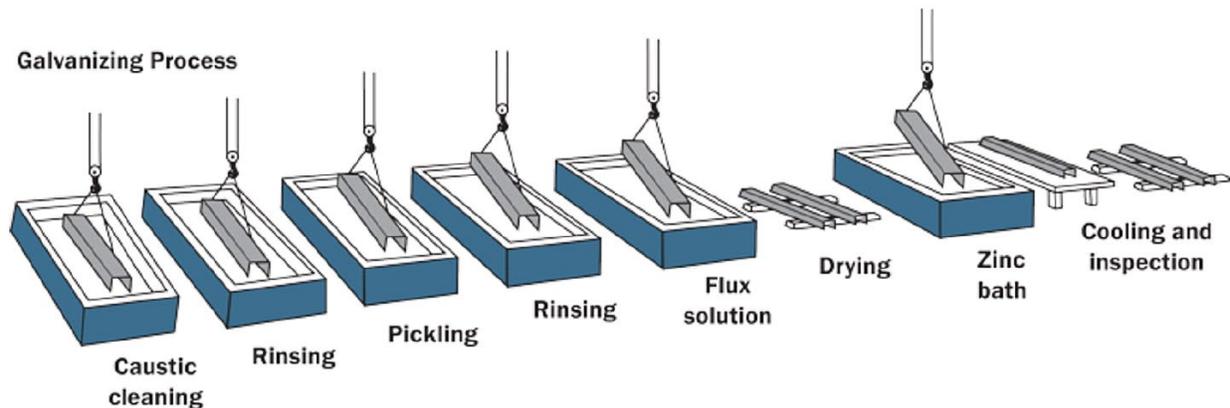


Process

Spin galvanizing is a hot-dip process that utilizes a centrifuge anchored by the galvanizing kettle for immersing small to medium scale components into molten zinc. A tightly bonded alloy coating forms on the steel, providing long-term, durable protection from corrosion, while the centrifuge removes excess molten zinc to ensure coating uniformity, quality fit, and precise functionality.

A 2 MMBTU/hr natural gas-fired heater will provide heat for the process. A 10,000 CFM baghouse will provide particulate matter control for the hot-dip tank. Appendix D has vendor information on the baghouse.

An overview of the galvanizing process is provided below:



1. Caustic Cleaning

Material is immersed in a heated caustic solution to remove grease, dirt, oil, and water-based paints. This process will also remove any contaminants that cannot be removed by normal chemical cleaners (ie. welding slag, splatter, lacquer, and oil-based paints).

2. Caustic Rinse

Material is immersed in fresh water to remove any excess chemicals.

3. Acid Pickling

Material is immersed in a diluted Hydrochloric Acid solution to remove all rust, mill scale, and any other surface contaminant.

4. Acid Rinse

Material is immersed in fresh water to remove any excess acid and iron salts.

5. Fluxing

Material is immersed in a heated aqueous Zinc-Ammonium Chloride solution. This process will remove any remaining impurities, moisture, and oxide film from the steel. Flux acts as a bonding agent to the molten zinc.

6. Drying

Material is placed in a holding area for a certain amount of time. This will ensure the Flux is airdried and best prepared before entering the molten zinc.

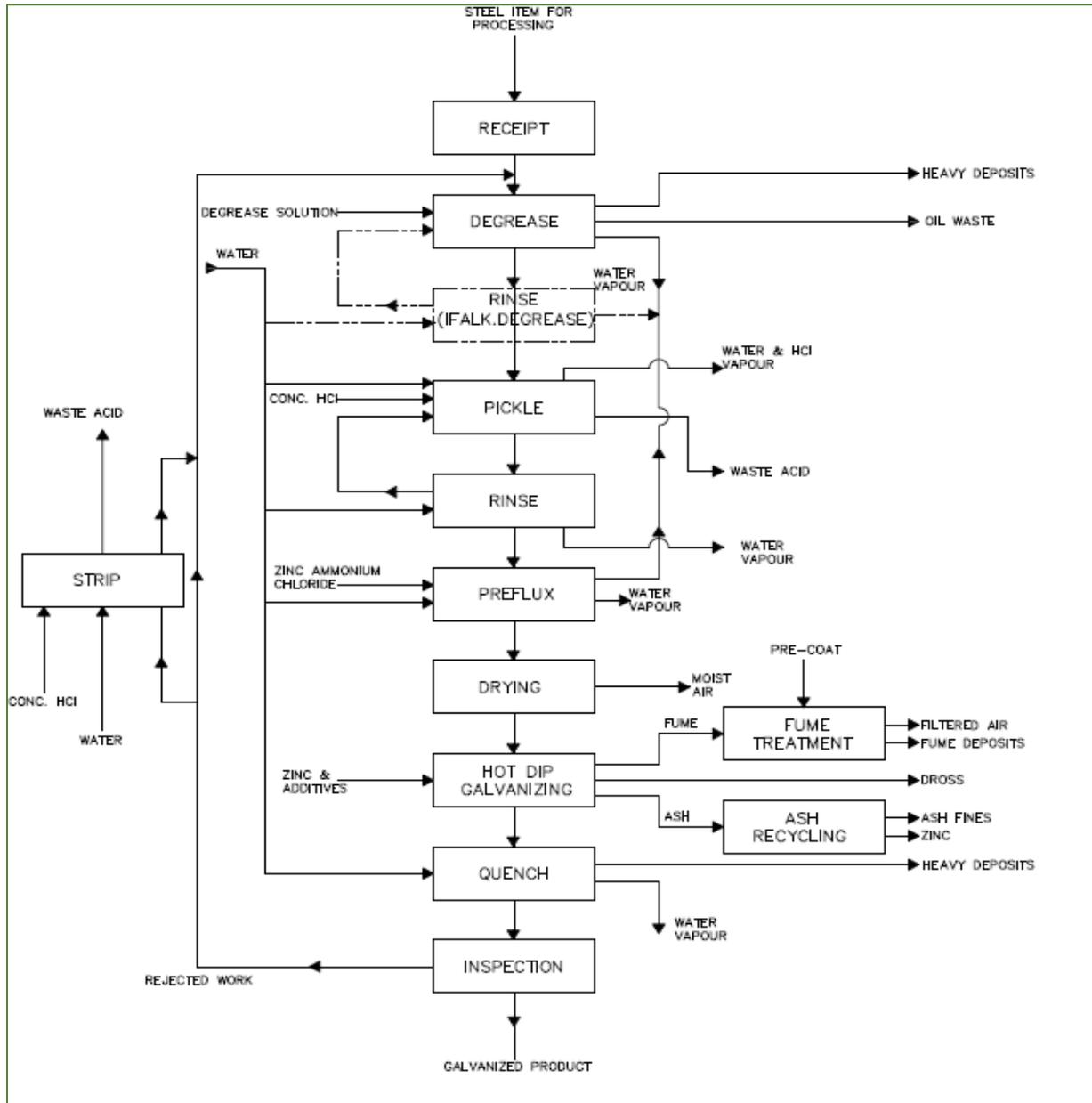
7. Galvanizing

Material is immersed in a molten zinc mixture. Molten zinc is heated to 840°F. Material will be removed from the zinc mixture when the coating thickness meets and exceeds relevant ASTM standards.

8. Inspection

Material is inspected for any imperfections and is tested by American Galvanizer Association certified inspectors to ensure compliance with ASTM standards.

A materials process flow diagram is provided below:



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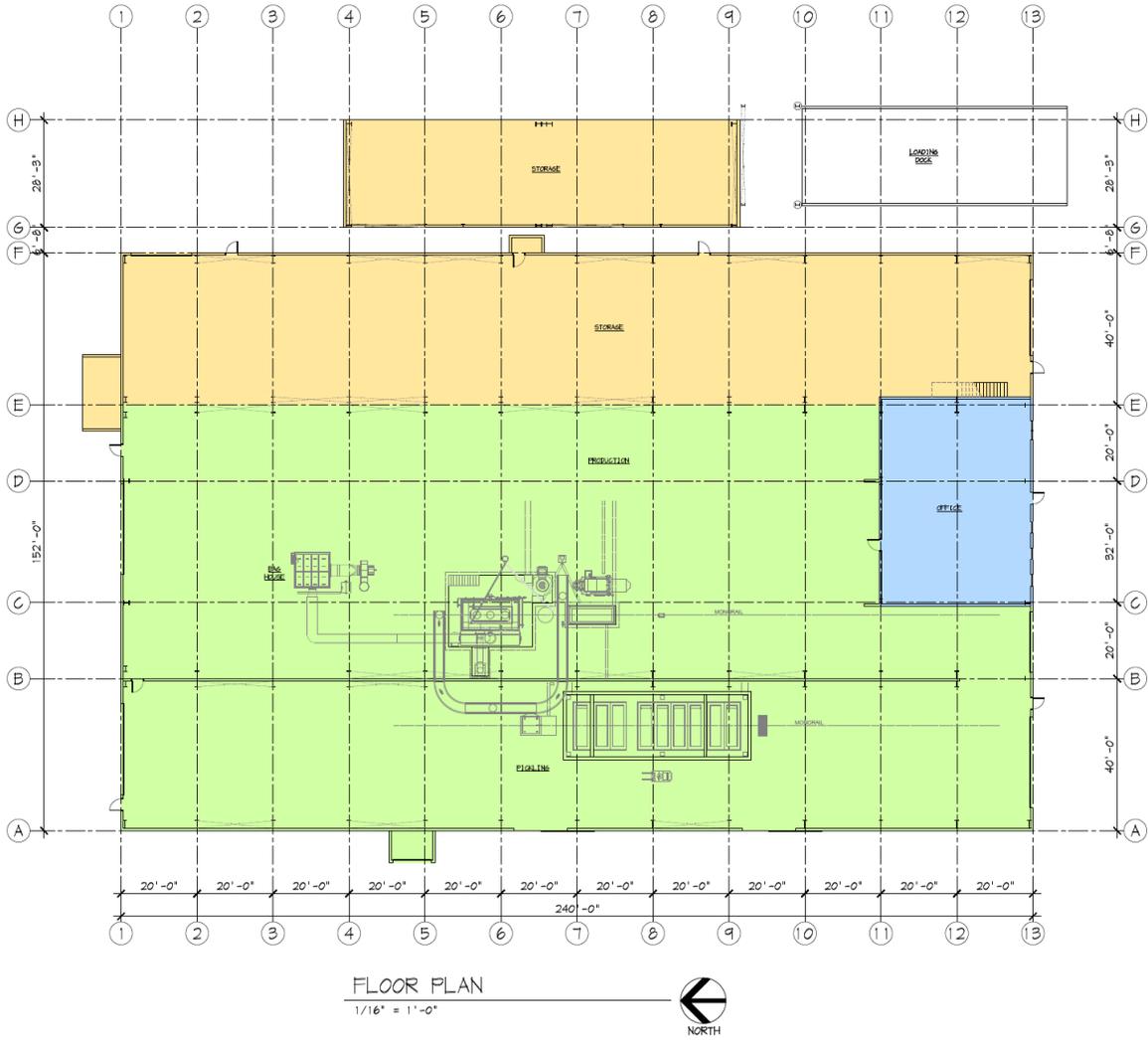


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 Tulsa, Oklahoma, USA 74107
 Phone: (918)712-2406
 Fax: (918)712-9850
 email: tech@westtechgalv.com

GALVANIZING MATERIAL FLOW DIAGRAM

DWN.	CSM	MAR 11	REV.		APPR.	SCALE	JOB NO.	DWG. NO.	REV. NO.
CHK.			CHK.		BY	N.T.S.			1

The proposed facility layout is shown below:



The nine tanks shown prior to the galvanizing kettle area are:

1. Caustic soda
2. Rinse water
3. HCl
4. HCl
5. HCl
6. HCl
7. Rinse water
8. Rinse water
9. Zinc ammonium chloride

A more detailed facility layout is provided in Appendix D.

The facility expects to operate 24 hours per day, 5 days per week, along with some occasional weekends. Production capacity is approximately 1 ton per hour maximum.

Emissions

Primary emissions of concern are particulate matter from the fluxing agents used in dip galvanizing kettle. Other emissions include small quantities of hydrochloric acid from the pickling tanks. Another potential toxic air pollutant (TAP) used in the process is sodium hydroxide (caustic) that is used in the degreasing/cleaning tank. However, as caustic does not have a vapor pressure value, emissions from the tank are expected to be near zero and well below the Small Quantity Emission Rate (SQER) for sodium hydroxide.

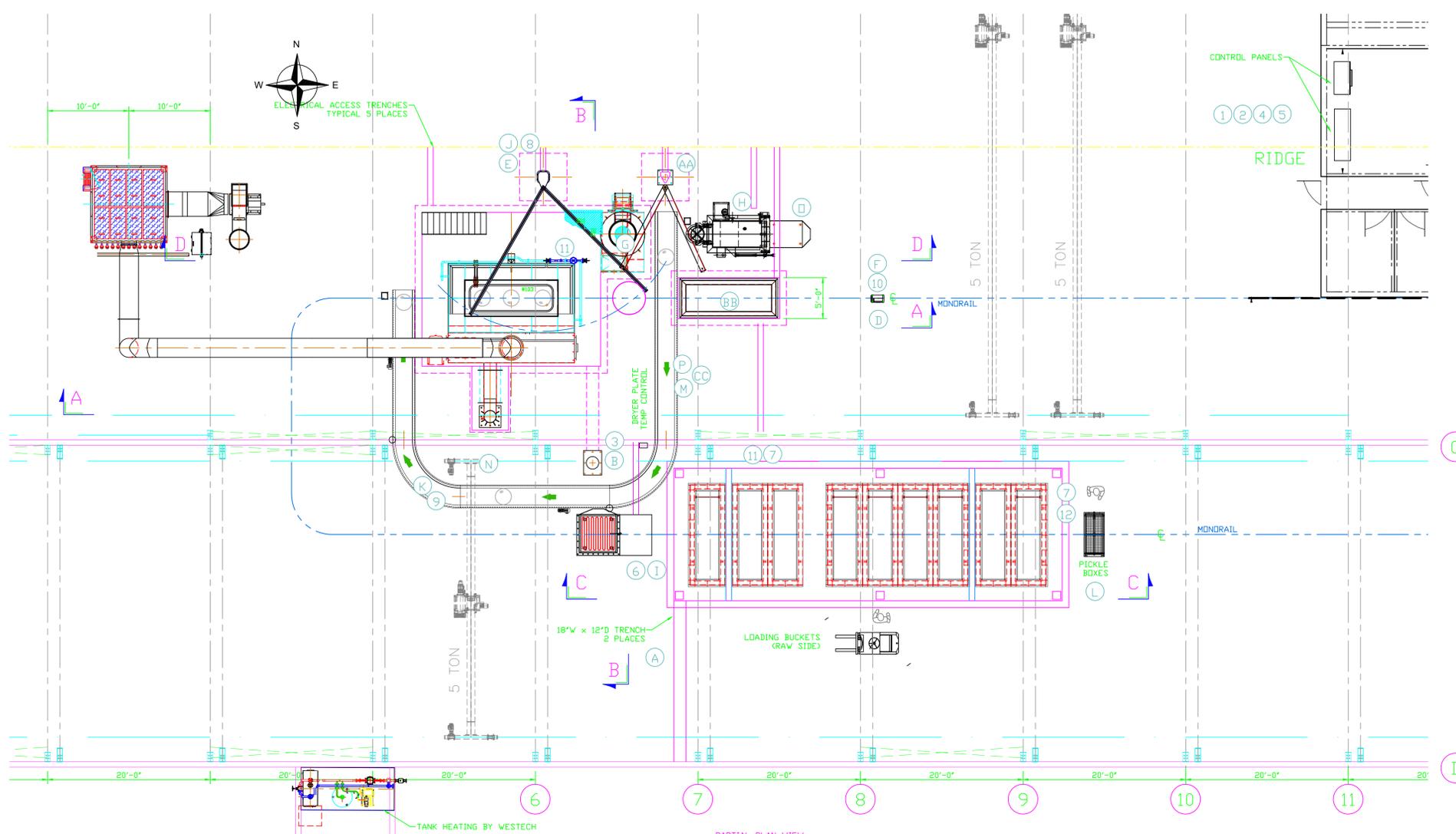
Particulate matter emissions from the galvanizing kettle are proposed to be controlled with a 10,000 CFM baghouse with a minimum of 99% control efficiency.

Hydrochloric acid emissions are based on worst-case assumptions of the tank being open and emitting 8,760 hours per year.

Appendix E contains the emissions calculations. Particulate matter emissions are calculated to be less than 0.028 lb/hr and 0.124 tons per year. Worst-case hydrochloric acid emissions are calculated to be less than 0.026 lb/day, less than the SQER of 0.67 lb/day.

Safety Data Sheets are also provided in Appendix E.

Appendix D
Vendor and Manufacturer Information



TAG	LOCATION	DESCRIPTION
1	FURNACE PANEL	25 FLA 480V, 3ph, 60Hz
2	BAG FILTER	125 FLA 480V, 3ph, 60Hz 117
3	PIT VENTILATION FAN	12 FLA 480V, 3ph, 60Hz
4	CENTRIFUGE	65 FLA 480V, 3ph, 60Hz
5	TIPPER/QUENCH	10 FLA 480V, 3ph, 60Hz
6	DRYING TABLE	30 FLA 480V, 3ph, 60Hz
7	TANK HEATING (BY CLIENT)	100 FLA 480V, 3ph, 60Hz 117
8	JIB CRANE	7 FLA 480V, 3ph, 60Hz
9	BUCKET RETURN CONVEYOR	10 FLA 480V, 3ph, 60Hz
10	CHAIN HOISTS	30 FLA 480V, 3ph, 60Hz
11	GAS FROM MAINS	FLDV 30 SCFH MAX 5 PSIG/MIN 2 PSI
12	TANK FILL WATER	FILL ONLY
13	COMPRESSED AIR TO BAG FILTER	FLDV 60 CFM @ 90 PSI MIN

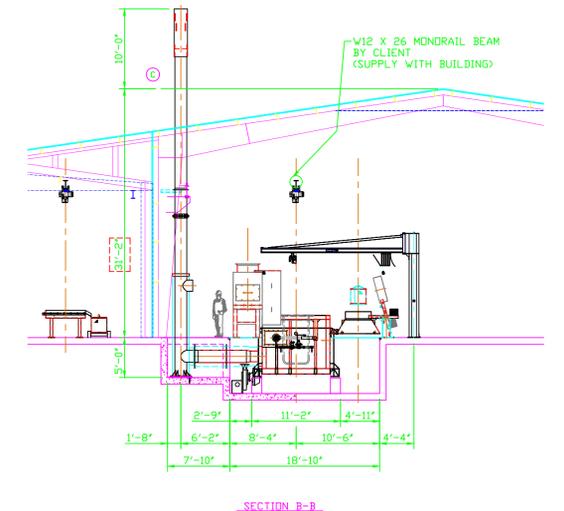
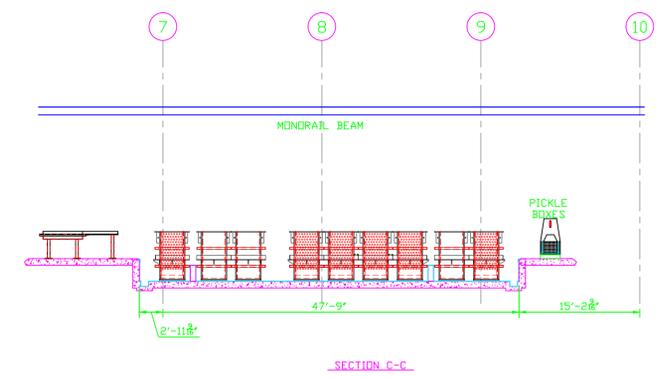
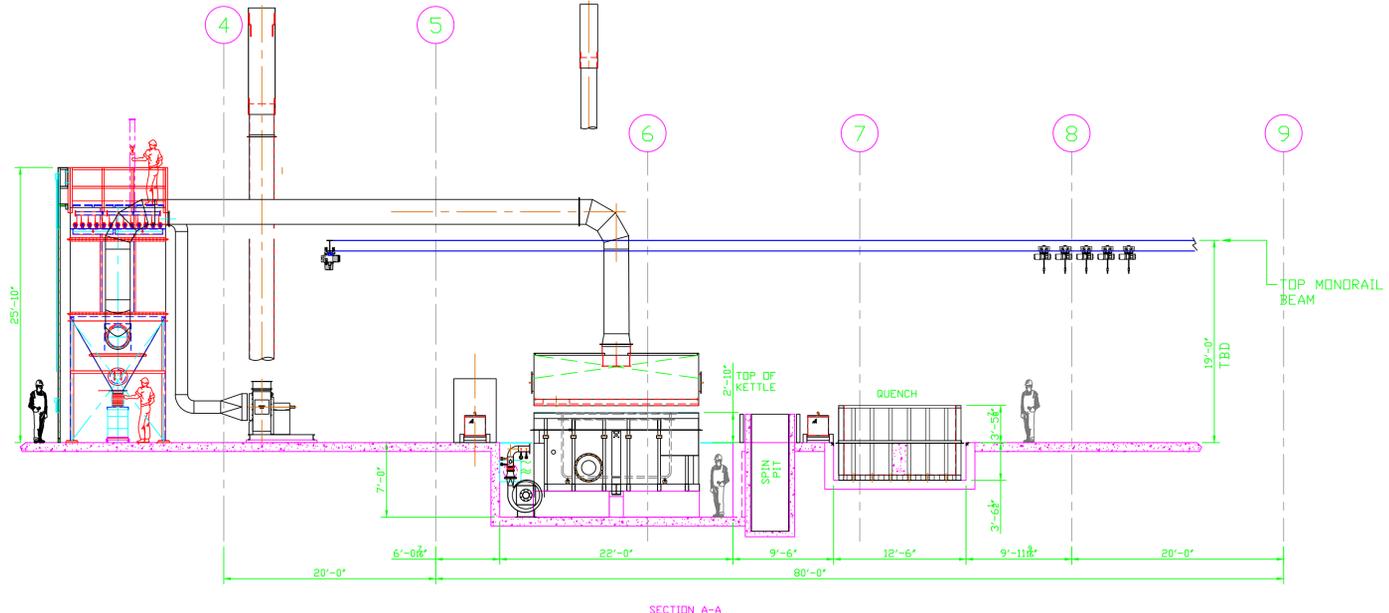
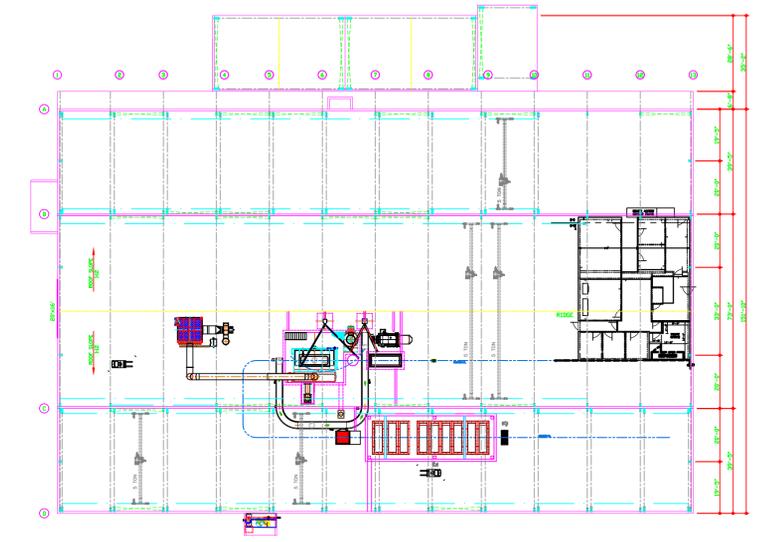
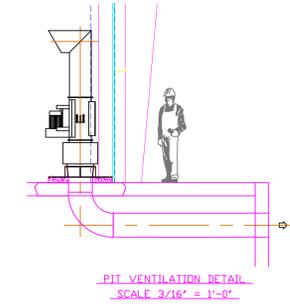
Letter	Description	Quantity
A	Plant Design and Drawings	4689
B	Ventilation Fan for Furnace Pit:	4690
C	White Fume Bag Filter – 10,000 cfm with control:	4691
D	(5) 1-Ton Capacity 2-speed Chain Hoists:	4692
E	(1) 1-Ton Capacity High Speed Chain Hoist:	4693
F	*Monorail Bussbar and Pick-up Arms:*	4694
G	Westech Pit-mount Centrifuge – 24" diameter:	4695
H	Westech Automatic Bucket Tipper / Quench:	4696
I	Westech Electrically Heated Dryer Plate:	4697
J	(1) 1/2 ton Rotating Jib Crane:	4698
K	(1) Empty Bucket Return Conveyor:	4699
L	(5) Copolymer Polypropylene Pickling Boxes:	4700
M	(8) Perforated Carbon Steel Centrifuge Buckets:	4701
N	Design & Drawings for Exhaust Duct, Chimney:	4702
O	Drawing for Sorting/Inspection Table:	4703
P	Drawing for Standard Centrifuge Buckets:	4704
Q	Design & Drawings for White Fume Ducting, Chimney:	4705

Additional Equipment for Spinning a Batch

AA (1) 1/2 ton Rotating Jib Crane:

BB Drawing for Steel Quench Tank

CC Extensions for Bucket Return Conveyor



□ DENOTES DIMENSION TO BE CONFIRMED.

DATE	SENT TO	REMARKS	DWN	TLT	DEC/20/21
AUG/4/23	CLIENT	REV 9 NEW BUILDING	CHK	JDH	JAN/13/22
NOV/2/23	CLIENT	REV 10 NEW BUILDING LAYOUT	APPR		
NOV/7/23	CLIENT	REV 11			
NOV/21/23	CLIENT	REV 12 REVIEW & COMMENTS			
NOV/28/23	CLIENT	REV 13 REVIEW & COMMENTS			

SCALE 1/8"=1'-0"

REVISIONS	DESCRIPTION	DATE	BY
1	BUILDING SIZE		
2	NEW BUILDING (SEACON)		
3	REVISED LAYOUT	OCT/31/23	WG
4	PER CLIENT MARKUP	NOV/7/23	WG
5	CLIENT BUILDING	NOV/20/23	JDH
6	ADD MONORAIL LOOP, DUCT ROUTING	NOV/27/23	JDH

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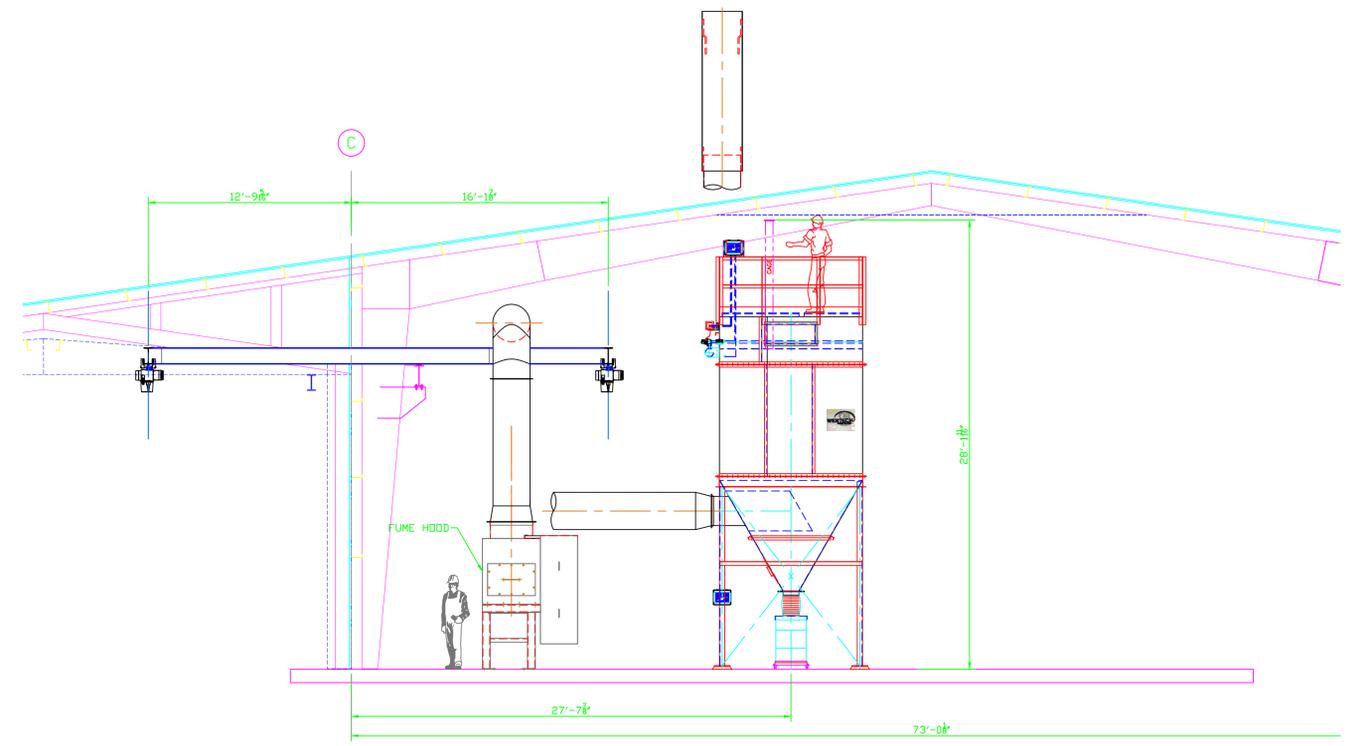
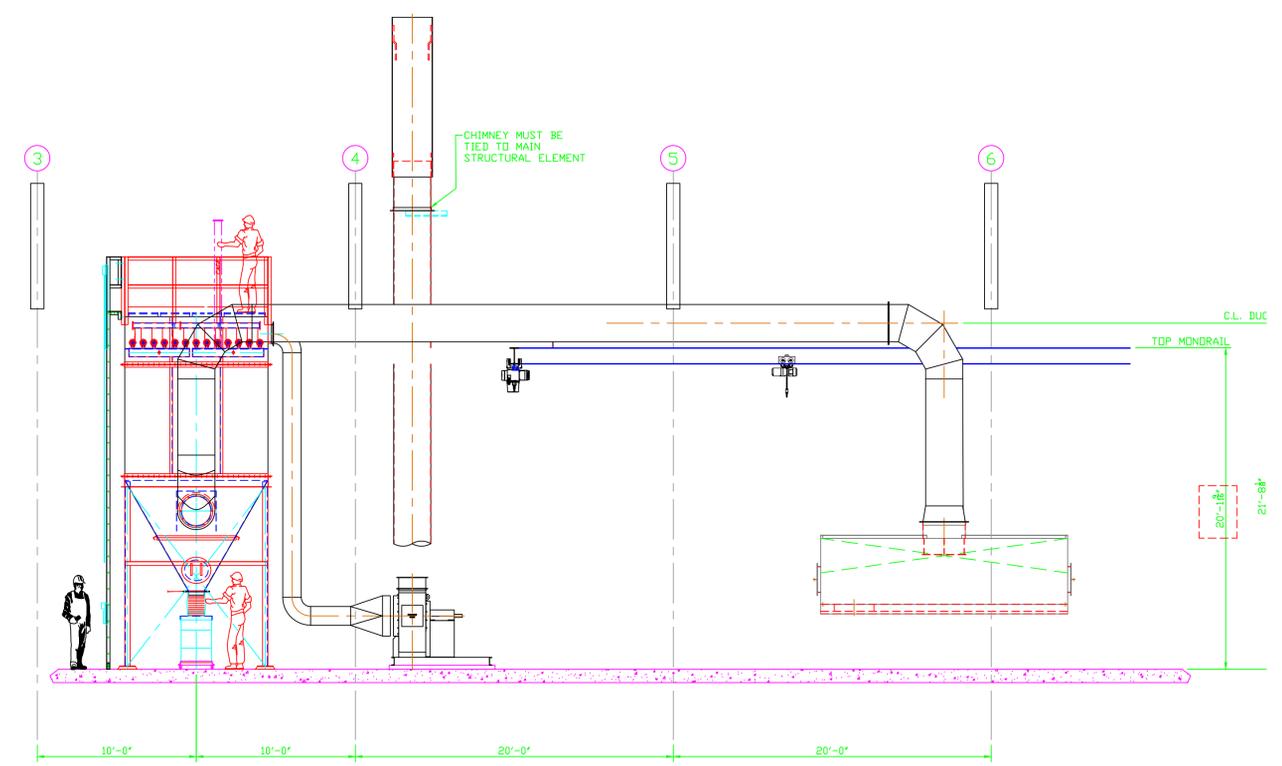
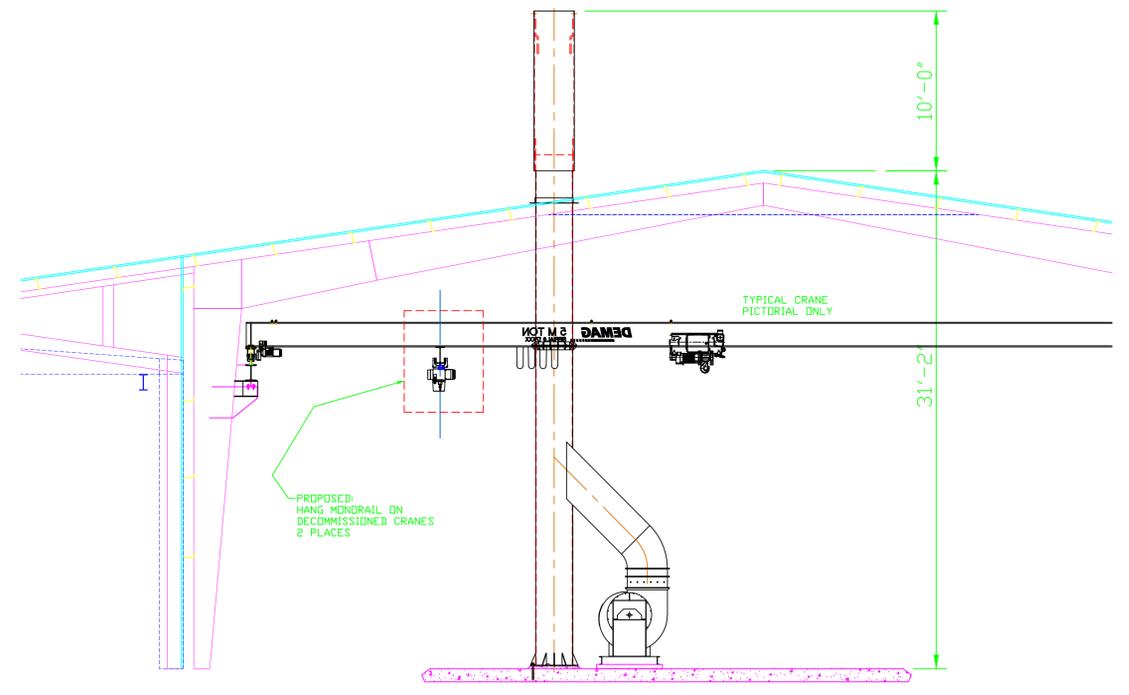
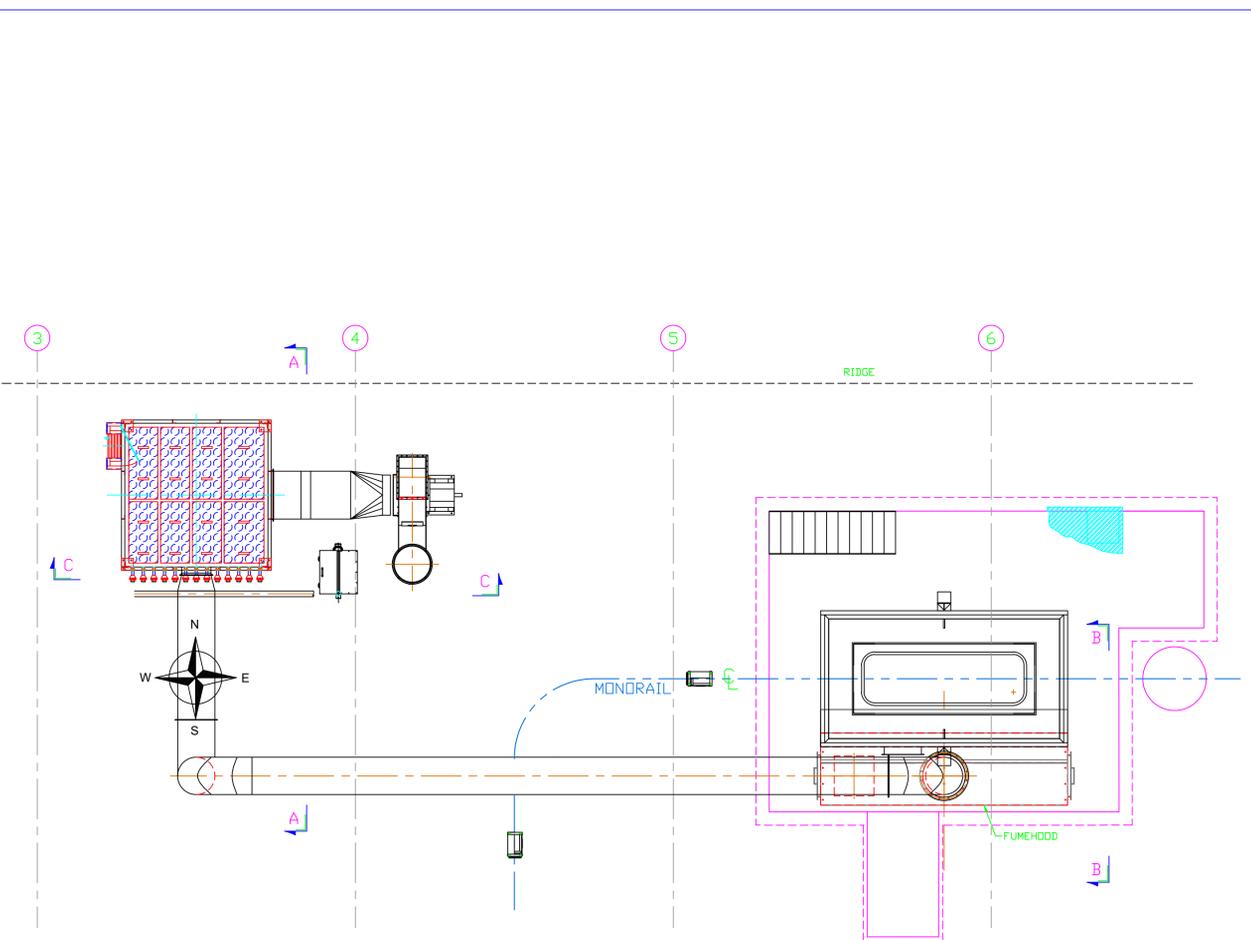


REF: 4257 QTF

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DETAILS:
PLANT LAYOUT
SEATTLE GALVANIZING

JOB NO. 4689	DWG NO. JS-4689-1m	REV NO. 13
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DATE	SENT TO	REMARKS	DWN	TLT	FEB/14/22
MAR/14/22	U.S. AIR FILTRATION	CHANGED LOCATION	CHK		
APR/28/22	CLIENT	REV 1 PRELIMINARY	APPR		
MAY/17/22	CLIENT	REV 2			
NOV/21/23	CLIENT	REV 3			
NOV/28/23	CLIENT	REV 4			

REVISIONS	DESCRIPTION	DATE	BY
1	PER SEACON BUILDING	APR/26/22	MAR/14/22 JDH
2	BUILDING SIZE, AS FINAL		MAY/11/22 TLT
3	NEW BUILDING		NOV/20/23 JDH
4	GENERAL		NOV/27/23 JDH

Western Technologies, Inc.
 4404 South Maybelle Avenue
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REF: Template
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 DETAILS:
 BAGHOUSE LAYOUT
 SEATTLE GALV
 JOB NO. 4705
 DWG NO. JS-4705-1d
 REV NO. 4

23rd March 2022

**Seattle Galvanizers
Spin Plant Pollution Control rev1**

1. The galvanizing fume extraction system for fume generated on the surface of the molten zinc is in the form of elevated peripheral (lip) fume extraction. The mouth of the fume extraction slot has evolved over decades to efficiently capture fume and the mouth of the slot is designed for optimal extraction velocity.

The rate of extraction has also evolved over decades of design. The only standard for peripheral fume extraction from galvanizing kettle is a German standard VDV 2579 and this standard requires an extraction rate of 3,500 m³/m²/hr. of kettle surface area. This equates to an extraction rate of approximately 5,800 C.F.M. From years of experience we have determined that 1,000 C.F.M. per foot of kettle length for kettles under 5'-0" wide to be more efficacious. We have proposed an extraction rate of 10,000 C.F.M.

2. Seattle Galv to supply information for chemicals used in the process.
3. There are no solvent cleaners used in the process to the best of our knowledge.
4. The only fuel burning piece of equipment in the plant is a galvanizing furnace. The furnace is a 2-burner high velocity furnace reference 3366. It has a thermal input of 2,000,000 BTU/hr. and uses natural gas.
5. Baghouse:
 - a. Air Filtration Pulse Jet Dust Collector
 - b. Model #1313PT-96-6
 - c. Galvanizing Fume Filtration
 - d. 10,000 CFM
6. Seattle Galv to supply information.

***Manufacturers of the Most Advanced Galvanizing
Equipment Available in the World Today!***



DATA SHEET

Typical Galvanizing Fume Analysis

Size Range	30% < 1 μ m
	70% < 2 μ m
	90% < 4 μ m

Particulate Weight Range 20 to 70 mg/m³

Typical Composition (Dry Galvanizing):

ZnCl ₂	3.6%
ZnO	15.8%
Zn	4.9%
NH ₄ Cl	68.0%
NH ₃	1.0%
Oil	1.4% (dependent upon efficiency of degrease)
Carbon	2.8%

The weight of particulate removed by the bag filter will vary greatly depending upon the flux used and the surface area of work being galvanized. However a general guide used in the U.S., assuming 6% zinc usage would be 150g/tonne of steel galvanized. General composition as follows:

Ammonium Chloride	68.0%
Zinc Oxide	16.0%
Zinc	5.0%
Zinc Chloride	3.5%
Carbon, Water, Oil and Ammonia (combined)	7.5%

Appendix E

Emissions Calculations Summary and Safety Data Sheets

Hydrochloric (HCl) Acid Tank Table

HCl Pickle Tanks		4
A = Surface area of tank (ft ²)		33
T = Operating temperature (C°)		15.6
Conc. = Percent concentration of HCl by weight (%w/w)		15%
V = Air velocity across surface of tank (fps)		1
Pv = Vapor pressure of HCl (mmHg from the table in the Appendix)		0.020
E = Evaporation rate from tank (lb/hr-ft ²)		0.00016
ER1 = Emission rate uncontrolled (lb/hr)		0.0218
FE = Suppressant efficiency 1 - (%)/100		0
CE = Hood capture efficiency (%)		0
AE = Abatement device efficiency 1 - (%)/100		0
ER4 = Emission rate controlled (lb/hr)		0.0218
FUG = Fugitive emissions (lb/hr)		0.010881
OY = Annual operating hours		8760
AFUG = Annual HCl fugitive emission rate (tons/year)		0.048
AER = Annual HCl emission rate (tons/year)		N/A

Supplementary Information

Table 2a

HCl Pickle Tanks	
ER1 (enter into Table 2) (lbs/hr)	0.0218
ER2 (lbs/hr)	0.0218
ER3 (lbs/hr)	0.0218
(ER2 - ER3) (lbs/hr)	
ER4 (enter into Table 2) (lbs/hr)	
HCL (lbs/day)	0.26
HCL SQER (24-hr) (CAS 7647-01-0)	0.67

Galvanizing/Kettle Uncontrolled Emissions

Galvanizing Facility Parameters

HP = Maximum Hourly Production in Pounds/Hour of Galvanized Product (lbs/hr)	1846
AP = Maximum Annual Production in Tons/Year of Galvanized Product (tpy)	8086
AH = Maximum Annual Operating Hours Per Year (hrs/yr)	8760
EF = Zinc Kettle Emission Factor (lbs/ton) ⁴	0.52
EH = Hourly Uncontrolled PM10 Emissions (lbs/hr)*	0.5
EA = Annual Uncontrolled PM10 Emissions (tpy)**	2.1

Galvanizing/Zinc Kettle Controlled Emissions

Galvanizing Facility Parameters

EH = (See Previous Table) (lbs/hr)	0.5
EA = (See Previous Table) (tpy)	2.1
CE = Kettle Hood Capture Efficiency (%)	95
AE = Control Device Efficiency (%)	99
EHC = Hourly Controlled PM10 Emissions (lbs/hr)*	0.005
EAC = Annual Controlled PM10 Emissions (tpy)**	0.020
FH = Hourly Fugitive PM10 Emissions (lbs/hr)***	0.024
FA = Annual Fugitive PM10 Emissions (tpy)****	0.104

Total PM10 (lbs/hr), controlled	0.028
Total PM10 (tpy), controlled	0.124

VII. Speciated Zinc Kettle

(a) Hourly Controlled

Contaminant	Percentage in Decimal		lb/hr
PM ₁₀	1.00	>	0.0283
NH ₄ Cl	0.68	>	0.0193
ZnO	0.16	>	0.0045
ZnCl ₂	0.04	>	0.0011
Zn	0.05	>	0.0014
NH ₃	0.01	>	0.0003

References

1. National Emission Standards for Hazardous Air Pollutants (NESHAP) for Steel P Proposed Standards Appendix E, 1997
2. "Emissions from Open Tanks" model for HCl pickling process developed by Mr. P available on the [Esco Engineering](#) website
3. "Heat Losses from Tanks, Vats, and Kettles," Friedman, S.J., Heating and Ventil.
4. Emissions from Hot-Dip Galvanizing Processes Final Report EPA – 905/4-76-00.

FROM: Texas Commission on Environmental Quality
Calculations Guidance Package
Hot Dip Galvanizing

Ammonium Chloride Granular

Safety Data Sheet

SECTION 1: Identification

1.1. Product identifier

Product name : Ammonium Chloride Granular (G, C Grades)

1.2. Recommended use and restrictions on use

Manufacturing

1.3. Supplier

Zaclon LLC
2981 Independence Road
Cleveland, OH 44115
T 800-356-7327

1.4. Emergency telephone number

Emergency number : Chemtrec 1 800 424 9300

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-US/CAN Classification

Acute toxicity (oral) Category 4 H302

Serious eye damage/eye irritation Category 2A H319

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US/CAN labeling

Hazard pictograms :



Signal word : Warning

Hazard statements : H302 - Harmful if swallowed
H319 - Causes serious eye irritation

Precautionary statements : P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P330 - Rinse mouth
P337+P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-CAN classification	GHS-US classification
Ammonium chloride	(CAS No) 12125-02-9	99.5-100	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Comb. Dust	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Comb. Dust

Ammonium Chloride Granular

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SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove to fresh air immediately. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.
First-aid measures after skin contact	: Immediately wash the affected area with plenty of soap and water for a minimum of 15 minutes. Remove any contaminated clothing. Get immediate medical attention. Redness and sores may develop if contaminated area was not attended to immediately or improper washing was not thorough.
First-aid measures after eye contact	: Flush eyes immediately with copious amounts of water for at least 15 minutes. Keep eyelids apart while irrigating the eyes. Get medical attention immediately.
First-aid measures after ingestion	: Do not induce vomiting. Give large quantities of water or milk. Call a physician. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: Inhalation of excessive concentrations of vapor, fumes, and/or dust produces irritation of the upper respiratory tract resulting in coughing, excessive spitting and choking sensation. Reactions in humans have usually been limited to mild irritation or inflammation of the nose and throat.
Symptoms/injuries after skin contact	: Ammonium chloride may cause skin irritation, or dermatitis on skin exposed for prolonged periods.
Symptoms/injuries after eye contact	: Ammonium Chloride, including vapor, can cause irritation and inflammation of the eyes. Permanent damage to the eye can occur if substance is not immediately flushed from the eye.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water, water fog, carbon dioxide (CO ₂), dry chemical.
Unsuitable extinguishing media	: None.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Fumes of nitrogen oxides, hydrogen chloride and possibly ammonia gas may be evolved during a fire.
Explosion hazard	: None known.

5.3. Advice for firefighters

Protection during firefighting	: Firefighters should wear full protective gear.
--------------------------------	--

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Stop the flow of material, if this is without risk.
Methods for cleaning up	: Sweep up and recycle into process if contamination does not present a problem. Use appropriate protective equipment if dust is generated or contact with eyes or skin is expected. Flush residues and liquid to holding area for neutralization before discharge.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation/exhaustion at the workplace. Avoid dust generation. Avoid contact with skin and eyes. Do not allow product to enter sewage system or water bodies.
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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep container tightly sealed and in the original container.
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7.3. Specific end use(s)

Manufacturing

Ammonium Chloride Granular

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ammonium chloride (12125-02-9)		
USA - ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (fume)
USA - ACGIH	ACGIH STEL (mg/m ³)	20 mg/m ³ (fume)
Canada (Quebec)	VECD (mg/m ³)	20 mg/m ³ (fume)
Canada (Quebec)	VEMP (mg/m ³)	10 mg/m ³ (fume)
Alberta	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Manitoba	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
New Brunswick	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
New Foundland & Labrador	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
New Foundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Nova Scotia	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Nunavut	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Northwest Territories	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Ontario	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Prince Edward Island	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Yukon	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Yukon	OEL TWA (mg/m ³)	10 mg/m ³ (fume)

8.2. Exposure controls

Appropriate engineering controls	: Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.
Hand protection	: Wear impervious gloves to minimize skin contact.
Eye protection	: Where chemical safety goggles or equivalent.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Granular nuggets, prills or rods.
Color	: No data available
Odor	: Odorless.
Odor threshold	: No data available
pH	: 4.0 - 6.0
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 642 °F (339°C)
Freezing point	: No data available
Boiling point	: > 212 °F (decomposes at 968°F/520°C)
Flash point	: No data available
Self ignition temperature	: No data available

Ammonium Chloride Granular

Safety Data Sheet

Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Water: 100 %
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

None.

10.5. Incompatible materials

Aluminum, zinc, tin and their alloys.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Oral: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ATE CA (oral)	500 mg/kg body weight
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Ammonium chloride (12125-02-9)

LD50 oral rat	1650 mg/kg
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Skin corrosion/irritation	: Not classified pH: 4.0 - 6.0
Serious eye damage/irritation	: Causes serious eye irritation. pH: 4.0 - 6.0
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified

Ammonium Chloride Granular

Safety Data Sheet

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.
Aquatic acute : Not classified
Aquatic chronic : Not classified

Ammonium chloride (12125-02-9)

LC50 fish 1	209 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

Not regulated for transport

14.2. Transport information/DOT

DOT

Not regulated for transport

14.3. Air and sea transport

IMDG

Not regulated for transport

IATA

Not regulated for transport

SECTION 15: Regulatory information

15.1. Canada National regulations

Ammonium chloride (12125-02-9)

Listed on the Canadian DSL (Domestic Substances List)

15.2. US Federal regulations

Ammonium chloride (12125-02-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.3. US State regulations

Ammonium chloride (12125-02-9)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Ammonium Chloride Granular

Safety Data Sheet

SECTION 16: Other information

Full text of H-phrases:

H302	Harmful if swallowed
H319	Causes serious eye irritation

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Zinc Chloride

Safety Data Sheet

SECTION 1: Identification

1.1. Product identifier

Product name : Zinc Chloride

1.2. Recommended use and restrictions on use

Manufacturing

1.3. Supplier

Zaclon LLC
2981 Independence Road
Cleveland, OH 44115
T 800-356-7327

1.4. Emergency telephone number

Emergency number : Chemtrec 1 800 424 9300

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-US/CAN Classification

Acute toxicity (oral) Category 4	H302
Skin corrosion/irritation Category 1B	H314
Hazardous to the aquatic environment - Acute Hazard Category 1	H400
Hazardous to the aquatic environment - Chronic Hazard Category 1	H410

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US/CAN labeling

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements :

P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER/doctor/...
P312 - Call a POISON CENTER/doctor if you feel unwell
P330 - If swallowed, rinse mouth
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

Zinc Chloride

Safety Data Sheet

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-CAN classification	GHS-US classification
Zinc chloride	(CAS No) 7646-85-7	94 - 100	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : For even minor contact, immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water.
- First-aid measures after eye contact : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- First-aid measures after ingestion : Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory tract irritation.
- Symptoms/injuries after skin contact : Causes severe skin burns.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : In a remote area, use water fog. Carbon dioxide (CO₂). Powder. Foam.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : None known.
- Explosion hazard : None known.

5.3. Advice for firefighters

- Protection during firefighting : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Stop the flow of material, if this is without risk.
- Methods for cleaning up : Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Avoid raising powdered materials into airborne dust. To clean the floor and all objects contaminated by this material, use water.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact with eyes, skin and clothing. Use personal protective equipment as required. Wash thoroughly after handling.

Zinc Chloride

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Do not expose to temperatures exceeding 50°C/122°F. Keep only in original container. Store in dry protected location to prevent any moisture contact. Storage area: Store at ambient temperature. Store in tightly closed containers. Store under dry conditions. Store in a place accessible by authorized persons only. Store away from heat/moisture.

7.3. Specific end use(s)

Manufacturing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Zinc chloride (7646-85-7)		
USA - ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³ (fume)
USA - ACGIH	ACGIH STEL (mg/m ³)	2 mg/m ³ (fume)
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³ (fume)
Canada (Quebec)	VEMP (mg/m ³)	1 mg/m ³ (fume)
Alberta	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Alberta	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
British Columbia	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
British Columbia	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Manitoba	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Manitoba	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
New Brunswick	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
New Brunswick	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
New Foundland & Labrador	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
New Foundland & Labrador	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Nova Scotia	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Nova Scotia	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Nunavut	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Nunavut	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Northwest Territories	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Northwest Territories	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Ontario	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Ontario	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Prince Edward Island	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Prince Edward Island	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Saskatchewan	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Saskatchewan	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Yukon	OEL STEL (mg/m ³)	2 mg/m ³ (fume)
Yukon	OEL TWA (mg/m ³)	1 mg/m ³ (fume)

8.2. Exposure controls

Appropriate engineering controls : Local exhaust and general ventilation must be adequate to meet exposure standards.

Hand protection : Wear impervious gloves to minimize skin contact.

Eye protection : Protective goggles.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : White powder

Odor : Odorless

Odor threshold : No data available

pH : No data available

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Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 287 °C
Freezing point	: No data available
Boiling point	: 732 °C
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 2.93 g/cm ³
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

None.

10.5. Incompatible materials

Cyanides, strong alkalis

10.6. Hazardous decomposition products

Hydrochloric acid fumes. ZnO.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Oral: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ATE CA (oral)	500 mg/kg body weight
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Zinc chloride (7646-85-7)	
LD50 oral rat	1100 mg/kg

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Eye damage, category 1, implicit
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified

Zinc Chloride

Safety Data Sheet

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.
Aquatic acute : Very toxic to aquatic life.
Aquatic chronic : Very toxic to aquatic life with long lasting effects.

Zinc chloride (7646-85-7)

BCF fish 1	16000
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Zinc chloride (7646-85-7)

BCF fish 1	16000
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG) : UN2331
Packing group : III - Minor Danger
TDG Primary Hazard Classes : 8 - Class 8 - Corrosives
Transport document description : UN2331 ZINC CHLORIDE, ANHYDROUS, 8, III
Proper Shipping Name (TDG) : ZINC CHLORIDE, ANHYDROUS

Hazard labels (TDG) : 8 - Corrosive substances



Explosive Limit and Limited Quantity Index : 5 kg
Excepted quantities (TDG) : E1
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 25 kg
Marine pollutant : Yes (IMDG only)



14.2. Transport information/DOT

DOT

DOT NA no. : UN2331
UN-No.(DOT) : 2331
Packing group (DOT) : III - Minor Danger

Zinc Chloride

Safety Data Sheet

Transport document description : UN2331 Zinc chloride, anhydrous, 8, III
Proper Shipping Name (DOT) : Zinc chloride, anhydrous
Contains Statement Field Selection (DOT) :
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
Division (DOT) : 8
Hazard labels (DOT) : 8 - Corrosive



Dangerous for the environment : Yes
Marine pollutant : Yes



DOT Special Provisions (49 CFR 172.102) : IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx) : None
DOT Packaging Non Bulk (49 CFR 173.xxx) : 213
DOT Packaging Bulk (49 CFR 173.xxx) : 240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 25 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 100 kg
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Other information : No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 2331
Proper Shipping Name (IMDG) : ZINC CHLORIDE, ANHYDROUS
Transport document description (IMDG) : UN 2331 ZINC CHLORIDE, ANHYDROUS, 8, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Class (IMDG) : 8 - Corrosive substances
Packing group (IMDG) : III - substances presenting low danger

IATA

UN-No. (IATA) : 2331
Proper Shipping Name (IATA) : Zinc chloride, anhydrous
Transport document description (IATA) : UN 2331 Zinc chloride, anhydrous, 8, III, ENVIRONMENTALLY HAZARDOUS
Class (IATA) : 8 - Corrosives
Packing group (IATA) : III - Minor Danger

Zinc Chloride

Safety Data Sheet

SECTION 15: Regulatory information

15.1. Canada National regulations

Zinc chloride (7646-85-7)

Listed on the Canadian DSL (Domestic Substances List)

15.2. US Federal regulations

Zinc chloride (7646-85-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.3. US State regulations

Zinc chloride (7646-85-7)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Product name : Hydrochloric Acid, 10% v/v
Product code : LC15070

1.2. Recommended use and restrictions on use

Use of the substance/mixture : For laboratory and manufacturing use only.
Recommended use : Laboratory chemicals
Restrictions on use : Not for food, drug or household use

1.3. Supplier

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation H314 Causes severe skin burns and eye damage
Category 1B
Serious eye damage/eye irritation Category 1 H318 Causes serious eye damage

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
Precautionary statements (GHS-US) : P260 - Do not breathe mist, vapors, spray
P264 - Wash exposed skin thoroughly after handling
P280 - Wear protective gloves, eye protection, protective clothing, face protection
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center or doctor/physician
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations
If inhaled: Remove person to fresh air and keep comfortable for breathing

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

Hydrochloric Acid, 10% v/v

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Water	(CAS-No.) 7732-18-5	95.66	Not classified
Hydrochloric Acid, 37% w/w	(CAS-No.) 7647-01-0	4.34	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects	: Causes severe skin burns and eye damage.
Symptoms/effects after inhalation	: Possible inflammation of the respiratory tract.
Symptoms/effects after skin contact	: Caustic burns/corrosion of the skin.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Diarrhoea.
Chronic symptoms	: Affection/discolouration of the teeth.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	: Not flammable.
Explosion hazard	: Not applicable.
Reactivity	: Thermal decomposition generates : Corrosive vapors.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	: Not applicable.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Try to stop release. Dike and contain spill.
------------------	--

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Safety glasses. Protective clothing. Face-shield.
Emergency procedures	: Evacuate unnecessary personnel.

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6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray.
Hygiene measures : Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.
Incompatible products : metals. cyanides. Strong bases. Strong acids.
Incompatible materials : Direct sunlight.
Packaging materials : Do not store in corrodable metal.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrochloric Acid, 37% w/w (7647-01-0)		
ACGIH	ACGIH Ceiling (mg/m ³)	2.98 mg/m ³
ACGIH	ACGIH Ceiling (ppm)	2 ppm
OSHA	OSHA PEL (Ceiling) (mg/m ³)	7 mg/m ³
OSHA	OSHA PEL (Ceiling) (ppm)	5 ppm
IDLH	US IDLH (ppm)	50 ppm
NIOSH	NIOSH REL (ceiling) (mg/m ³)	7 mg/m ³
NIOSH	NIOSH REL (ceiling) (ppm)	5 ppm
Water (7732-18-5)		
Not applicable		

8.2. Appropriate engineering controls

Appropriate engineering controls : Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Chemical resistant apron. Face shield. Gloves. Safety glasses. Protective clothing.



Hand protection:

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Wear protective gloves

Eye protection:

Chemical goggles or face shield

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Wear appropriate mask

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: Odorless
Odor threshold	: No data available
pH	: ≤ 0.5
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 1 - 1.1
Molecular mass	: 36.46 g/mol
Solubility	: Soluble in water. Soluble in ethanol. Soluble in methanol.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: None.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

10.2. Chemical stability

Stable under normal conditions. Not established.

10.3. Possibility of hazardous reactions

Reacts violently with (some) bases: release of heat.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

Hydrochloric Acid, 10% v/v

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10.5. Incompatible materials

metals. cyanides. Strong bases.

10.6. Hazardous decomposition products

Hydrogen chloride. Thermal decomposition generates : Corrosive vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Skin and eye contact

Acute toxicity : Not classified

Hydrochloric Acid, 37% w/w (7647-01-0)	
LD50 oral rat	700 mg/kg
LD50 dermal rabbit	5010 mg/kg
ATE US (oral)	700 mg/kg body weight
ATE US (dermal)	5010 mg/kg body weight

Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns and eye damage.

pH: ≤ 0.5

Serious eye damage/irritation : Causes serious eye damage.

pH: ≤ 0.5

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Hydrochloric Acid, 37% w/w (7647-01-0)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects after inhalation : Possible inflammation of the respiratory tract.

Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Diarrhoea.

Chronic symptoms : Affection/discolouration of the teeth.

SECTION 12: Ecological information

12.1. Toxicity

Hydrochloric Acid, 37% w/w (7647-01-0)	
LC50 fish 1	282 mg/l (LC50; 96 h)
EC50 Daphnia 1	< 56 mg/l (EC50; 72 h)

12.2. Persistence and degradability

Hydrochloric Acid, 10% v/v	
Persistence and degradability	Not established.

Hydrochloric Acid, 10% v/v

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Hydrochloric Acid, 37% w/w (7647-01-0)	
Persistence and degradability	Biodegradability: not applicable. No test data on mobility of the components available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

Water (7732-18-5)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Hydrochloric Acid, 10% v/v	
Bioaccumulative potential	Not established.

Hydrochloric Acid, 37% w/w (7647-01-0)	
Log Pow	0.25 (QSAR)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Water (7732-18-5)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

Hydrochloric Acid, 37% w/w (7647-01-0)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1789 Hydrochloric acid, 8, II
UN-No.(DOT) : UN1789
Proper Shipping Name (DOT) : Hydrochloric acid
Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT) : II - Medium Danger
Hazard labels (DOT) : 8 - Corrosive



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242

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DOT Special Provisions (49 CFR 172.102)	: A3 - For combination packaging, if glass inner packaging (including ampoules) are used, they must be packed with absorbent material in tightly closed metal receptacles before packing in outer packaging. A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging. B3 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized. B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. N41 - Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material. T8 - 4 178.274(d)(2) Normal..... Prohibited TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP12 - This material is considered highly corrosive to steel.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 30 L
DOT Vessel Stowage Location	: C - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.
Other information	: No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Hydrochloric Acid, 10% v/v

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Hydrochloric Acid, 37% w/w	CAS-No. 7647-01-0	4.34%
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Hydrochloric Acid, 37% w/w (7647-01-0)

EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

Hydrochloric Acid, 10% v/v

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15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 10/24/2017

Other information : None.

Full text of H-phrases: see section 16:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H335	May cause respiratory irritation
H402	Harmful to aquatic life

NFPA health hazard

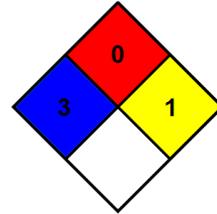
: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard

: 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity

: 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection

: C
C - Safety glasses, Gloves, Synthetic apron

SDS US LabChem

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sodium Hydroxide Solution, 50%

CHEMICAL NAME/CLASS: Caustic Soda

PRODUCT USE: Chemical processing, soaps and detergents, water treatment, pulp and paper.

SUPPLIER/MANUFACTURER'S NAME: Northstar Chemical, Inc.

ADDRESS: 14200 S.W. Tualatin-Sherwood Rd.
Sherwood, OR 97140

BUSINESS PHONE: 888-793-9476

EMERGENCY PHONE: CHEMTREC: 800-424-9300

DATE OF PREPARATION: March 30, 2020

2. HAZARD IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Corrosive to metals - Category 1

Skin corrosion - Category 1A

Serious eye damage - Category 1

LABEL ELEMENTS:



Signal Word: DANGER

Hazards:

May be corrosive to metals.

Causes severe skin burns and eye damage.

Precautionary statements

Prevention

Keep only in original container.

Wash skin thoroughly after handling.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

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. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage

Storage

Store locked up.
Store in corrosive resistant container with a resistant inner liner.

Disposal

Dispose of contents/ container to an approved waste disposal plant

Other hazards

No data available

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration
Water	7732-18-5	49 - 51.5 %
Sodium hydroxide	1310-73-2	48.5 - 51 %

4. FIRST-AID MEASURES

Description of first aid measures:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Immediate continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Properly dispose of leather items such as shoes, belts, and watchbands. Suitable emergency safety shower facility should be immediately available.

Eye contact: - Wash eyes with plenty of water for 15 minutes at least. Do not forget to remove contact lenses. Washing with water is the only acceptable method of removal of caustic soda (lye) from the eyes and skin. You may have 10 seconds or less to avoid serious permanent injury. Suitable emergency eye wash facility should be immediately available.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious. Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Eye irrigation may be necessary for an extended period of time to remove as much caustic as possible. Duration of irrigation and treatment is at the discretion of medical personnel. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

Unsuitable extinguishing media: Do not use water.

Special hazards arising from the substance or mixture Hazardous combustion products:

Not applicable

Unusual Fire and Explosion Hazards:

Product reacts with water. Reaction may produce heat and/or gases. This reaction may be violent. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters:

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Water is not recommended but may be applied in large quantities as a fine spray when other extinguishing agents are not available. This material does not burn. Fight fire for other material that is burning.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Refer to section 7, Handling, for additional precautionary measures. Keep upwind of spill. Ventilate area of leak or spill. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Dilute with water. Large spills: Dike area to contain spill. Collect in suitable and properly labeled containers. Attempt to neutralize by adding materials such as Acetic acid See Section 13, Disposal Considerations, for additional information.

7. HANDLING and STORAGE

Precautions for safe handling: Do not get in eyes, on skin, on clothing. Do not swallow. Avoid breathing mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. ALWAYS add caustic soda solution to water with constant agitation. NEVER add water to the caustic soda solution. 2. The water should be lukewarm (27-38°C or 80-100°F). NEVER start with hot or cold water. The addition of caustic soda to liquid will cause a rise in temperature. If caustic soda becomes concentrated in one area, is added too rapidly, or is added to hot or cold liquid, a rapid temperature increase can result in DANGEROUS mists, boiling or spattering which may cause an immediate VIOLENT ERUPTION. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Keep container closed. Do not store in: Zinc. Aluminum. Brass. Tin. See Section 10 for more specific information.

Storage stability

Storage temperature: > 16 °C (> 61 °F)

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Occupational exposure limits

US OSHA Table Z-1 Limit for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	TWA	2 mg/m3

US ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US OSHA P0

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Exposure controls

Engineering controls:

Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Styrene/butadiene rubber. Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier. Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance

Physical state: Liquid above freezing point

Color: Colorless

Odor: Odorless

Odor Threshold: No test data available

pH : 14 *Literature*

Melting point/range: 14 °C (57 °F) *Literature*

Freezing point: 14 °C (57 °F) *Literature*

Boiling point: (760 mmHg) 145 °C (293 °F) ASTM D1120

Flash point: closed cup *Literature* None

Evaporation Rate (Butyl Acetate = 1): No test data available

Flammability (solid, gas): Not Applicable

Flammability (liquids): Not expected to be a static-accumulating flammable liquid.

Lower explosion limit: Not applicable

Upper explosion limit: Not applicable

Vapor Pressure: 1.5 mmHg at 20 °C (68 °F) *Literature*

Relative Vapor Density (air = 1): Not applicable

Relative Density (water = 1): 1.52 at 20 °C (68 °F) *Literature*

Partition coefficient: noctanol/water: No data available

Auto-ignition temperature: Not applicable

Decomposition temperature: No test data available

Kinematic Viscosity: 0.35 St at 25 °C (77 °F) Calculated.

Explosive properties: No data available

Oxidizing properties: No

Liquid Density: 1.5 g/cm³ at 20 °C (68 °F) *Literature*

Molecular weight: No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY and REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid moisture. Product absorbs carbon dioxide from the air.

Incompatible materials: Heat is generated when mixed with water. Spattering and boiling can occur. Caustic soda solution reacts readily with various reducing sugars (i.e. fructose, galactose, maltose, dry whey solids) to produce CO. Take precautions including monitoring the tank atmosphere for CO to ensure safety of personnel before vessel entry. Avoid contact with: Acids. Glycols. Halogenated organics. Organic nitro compounds. Flammable hydrogen may be generated from contact with metals such as: Zinc. Aluminum. Tin. Brass.

Hazardous decomposition products: Does not decompose.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity

This is a concentrated caustic soda solution. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s): LD50, > 5,000 mg/kg Estimated

Acute dermal toxicity

Absorption has not been determined due to corrosivity.

As product: The dermal LD50 has not been determined.

Based on information for component(s): LD50, > 5,000 mg/kg Estimated

Acute inhalation toxicity

This is a concentrated caustic soda solution. Mist may cause severe irritation of upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

Skin corrosion/irritation

Based on testing for product(s) in this family of materials:

This is a concentrated caustic soda solution.

Brief contact may cause severe skin burns.

Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation

Based on testing for product(s) in this family of materials:

This is a concentrated caustic soda solution.

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness.
Chemical burns may occur.
Mist may cause eye irritation

Sensitization For skin sensitization

No specific, relevant data available for assessment.

For respiratory sensitization

No specific, relevant data available for assessment.

Specific Target Organ Systemic Toxicity (Single Exposure)

Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data for the component(s), repeated exposures are not anticipated to cause significant adverse effects

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

For the major component(s): In vitro genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish: May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

Persistence and degradability

Biodegradability: Biodegradability is not applicable to inorganic substances.

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 14 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler.

14. TRANSPORTATION INFORMATION

DOT

Proper shipping name	Sodium hydroxide solution
UN number	UN 1824
Class	8
Packing group	II
Reportable Quantity	Sodium hydroxide

Classification for SEA transport (IMO-IMDG):

Proper shipping name	SODIUM HYDROXIDE SOLUTION
UN number	UN 1824
Class	8
Packing group	II
Marine pollutant	No

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

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Sodium hydroxide solution
UN number	UN 1824
Class	8
Packing group	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Corrosive to metals
Skin corrosion or irritation
Serious eye damage or eye irritation

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 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.

Pennsylvania Worker and Community Right-To-Know Act: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65

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

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Product Literature Additional information on this product may be obtained by calling your sales or customer service contact.

Hazard Rating System HMIS

Health 3

Flammability 0

Physical Hazard 2

ACGIH: USA ACGIH Threshold Limit Values (TLV)

C: Ceiling limit

OSHA P0: USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

OSHA Z-1: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

TWA: 8-hour time weighted average

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECL - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative Information Source and References This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Information Source and References

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Appendix F
State Environmental Policy Act (SEPA) Checklist

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:

Seattle Galvanizing

2. Name of applicant:

Adam Clark

3. Address and phone number of applicant and contact person:

APPLICANT

**2812 Architecture
2812 Colby Avenue
Everett WA 98201
(425)252-2153**

OWNER

**Mina Investment Holdings, LLC.
1418 Market Street
Kirkland, WA 98033-5436
(206) 783-3100**

4. Date checklist prepared:

November 30, 2023

5. Agency requesting checklist:

City of Arlington

6. Proposed timing or schedule (including phasing, if applicable):

Begin Construction Spring 2024

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Geotechnical Engineering Study PanGeo Inc., November 27, 2023

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None Known

10. List any government approvals or permits that will be needed for your proposal, if known.

Puget Sound Clean Air Agency's Notice of Construction Order of Approval

Washington State Department of Ecology identification number for hazardous waste management

Washington State Department of Ecology Storm Water Baseline Operating Permit for Outdoor Industrial Activities

City of Arlington Land Use, Demolition and Commercial Building Permits

Mechanical, Electrical, Plumbing and Fire Protection Permits

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Tenant Improvements to the existing 39,058 SF industrial building. The total project site is approximately 2.5 acres in size. The improvements within the building will involve construction a facility that will be used for galvanizing of small parts. See the attached report "Seattle Galvanizing Company, Inc. Arlington Spin Project" for a through explanation of the galvanizing process as well as specifics as to how the building and property will be utilized.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

**18520 67th Avenue SE
Arlington, Washington
SEC 22 TWP 31 RGE 05
Parcel ID: 31052200102000**

Legal Description:

SEC 22 TWP 31 RGE 05 RT-1C) S 400 FT OF NE1/4 NE1/4 LY E OF NP R/W EXC CO RDS ALSO LESS R/W TO CITY OF ARL PER SWD REC AFN 200201100393 AND CORR AFN 200202080086

B. Environmental Elements [\[HELP\]](#)

1. **Earth** [\[help\]](#)

a. General description of the site:

(circle one): **Flat**, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

Approximately 5% at the entry driveway

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Marysville Sand. Described as well drained, stratified to massive sand with some gravel and areas of silt and clay. See the Geotechnical Engineering Study prepared by PanGeo Incorporated dated November 27, 2023.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

None Known

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The site is currently fairly flat. Existing elevations generally work for the proposed development. Some grading will occur to accommodate positive drainage to the storm water system. The intent is to balance cut and fill on the site but some import will most likely be required. This import is anticipated to be less than 500 cubic yards. Fill will come from a local pit of the contractors choice.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Not Anticipated

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?
The majority of the site is currently impervious. No new impervious surfaces are proposed.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
Erosion control measures as required by the governing jurisdiction will be installed and maintained during construction.

2. Air [\[help\]](#)

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.
Once the project is operational, fume emission from the galvanizing kettle will be present. The primary pollutant is particulate matter (fume from galvanizing process) which will be controlled with a baghouse that will be located within the existing building. Emissions of particulate matter should be less than 500 pounds a year. See the attached report "Seattle Galvanizing Company, Inc. Arlington Spin Project". This report gives a through explanation of the galvanizing process as well as specifics as to how the building and property will be utilized.
- Other than the building and operational information contained in the report, minor amounts of dust could be generated during construction. Emissions will be from vehicle exhaust and dust during construction.**
- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
None known
- c. Proposed measures to reduce or control emissions or other impacts to air, if any:
Emission from the galvanizing kettle will be controlled through the bag-house that is reviewed and approved by the Northwest Clean Air Agency.

3. Water [\[help\]](#)

- a. Surface Water: [\[help\]](#)
- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.
No
- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.
No

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Not applicable

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No wastewater from the plant will be released into surface waters.

Storm water will be generated from impermeable areas of the site. Runoff from those areas will be routed through a storm water treatment system as required by the governing jurisdiction.

b. Ground Water: [help](#)

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water will be generated from impermeable areas of the site. Runoff from all areas will be routed through a storm water treatment system as required by the governing jurisdiction.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.
Yes, normal usage of the site could contribute automotive fluids to the surface water system. The jurisdictionally required storm drainage treatment and discharge system will effectively treat vehicle usage to acceptable levels.

All materials associated with galvanizing operations are stored in raw form as solids or within double wall tanks for liquids. All are located inside of the

building. No wastewater from the plant will be discharged into the drainage system.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

Minor affects to drainage patterns could be effected as part of the development but the overall drainage patters are anticipated to remain. All storm water will be dealt with as required by the governing jurisdiction.

- d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Storm water impacts will be controlled by application of the requirements of the storm water regulations adopted by the governing jurisdiction.

4. **Plants** [\[help\]](#)

- a. Check the types of vegetation found on the site: **None**

___deciduous tree: alder, maple, aspen, other

___evergreen tree: fir, cedar, pine, other

___shrubs

___grass

___pasture

___crop or grain

___ Orchards, vineyards or other permanent crops.

___ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

___ water plants: water lily, eelgrass, milfoil, other

___other types of vegetation

- b. What kind and amount of vegetation will be removed or altered?

New landscaping will be installed to meet jurisdictional requirements.

- c. List threatened and endangered species known to be on or near the site.

None Known

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

New landscaping will be installed to meet jurisdictional requirements. Native plats are being used in the overall design. See the landscape plan prepared by 2812 architecture dated 17 oct 2023.

- e. List all noxious weeds and invasive species known to be on or near the site.

None Known

5. **Animals** [\[help\]](#)

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site.

None Known

c. Is the site part of a migration route? If so, explain.

No evidence of animal migration through the site.

d. Proposed measures to preserve or enhance wildlife, if any:

None

e. List any invasive animal species known to be on or near the site.

None Known

6. Energy and Natural Resources [\[help\]](#)

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Natural gas will be used to heat process tanks, galvanizing kettle and building space. Electricity will be used primarily for lighting and equipment.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Galvanizing kettle exhaust heat is recovered for heating the other process tanks. Appropriate insulation is used to minimize tank heating.

7. Environmental Health [\[help\]](#)

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Chemical process tanks present thermal and corrosive health hazards by direct contact. See the attached report "Seattle Galvanizing Company, Inc. Arlington Spin Project". This report gives a through explanation of the galvanizing process as well as specifics associated with safety of the facility.

1) Describe any known or possible contamination at the site from present or past uses.

None Known

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines

located within the project area and in the vicinity.

None Known

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Fuels related to construction equipment will be utilized during construction efforts. Toxic or hazardous chemicals are not anticipated to be utilized during construction operations associated with the development.

The post construction process will utilize the following chemicals: Hydrochloric Acid, Zinc Ammonium Chloride, Caustic Soda, and Zinc. Quantities of these materials stored on site are as follows:

QT1

Caustic Tank

Tank Size: 10'x3'x6'

Gallons: 1,250

Tank makeup: 50/50 mix Caustic Soda

QT1:

Rinse Caustic Tank

Tank Size 10'X3'X6'

Gallons: 1,250

Tank Makeup: Rinse water

QT3

Hydrochloric Acid (HCL)

Tank Size: 10'x3'x6'

Gallons: 1,250

Tank Makeup: Typical Strength 3%-12%.

QT2

Rinse Hydrochloric Acid Tank

Tank Size: 10'x3'x6'

Gallons: 1,250

Tank Makeup: Rinse water

QT1

Zinc Ammonium Chloride (Flux bath)

Tank Size: 10'X3'X6'

Gallons: 1,250

14%-16% Baume'

Specific Gravity 1.19%

QT1

Zinc bath (Galvanizing kettle)

Tank Size: 10'X 3'X6'

Pounds: 65,000

Molten Zinc 99.9% special high-grade zinc

- 4) Describe special emergency services that might be required.

Significant personnel exposure could require a response from the local Fire District's hazardous material response team.

- 5) Proposed measures to reduce or control environmental health hazards, if any:
Restricted access, signage, personnel training, seismic designed secondary spill containment, emergency contingency plans, proper materials of construction, adequate ventilation, proper operations/maintenance activities and IFC/IBC code compliance.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

There are no significant sources of noise on the site. The proposal is within 1/4 mile of the Arlington Airport.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short-term noise increases during business hours will occur during construction of the project. The facility will be operated 24/7. Noise created by the proposal during business hours will be from trucks and equipment and is not expected to be greater than the noise created by other businesses in the vicinity.

- 3) Proposed measures to reduce or control noise impacts, if any:
Adherence to local noise ordinances.

8. Land and Shoreline Use [\[help\]](#)

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site currently houses an unoperational industrial building. A industrial facility is located in the existing building to the north. A telephone pole facility is located to the West. A trucking facility is located to the south and the Gleneagle residential development is located to the east across 67th Avenue SE

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

Not anticipated

- c. Describe any structures on the site.

There is an existing 39,058 SF manufacturing building as well as a 2,945 SF storage building that contains a truck dock on the site. There is also a two-story office portion within the main industrial building.

- d. Will any structures be demolished? If so, what?
No
- e. What is the current zoning classification of the site?
GI (General Industrial)
- f. What is the current comprehensive plan designation of the site?
GI (General Industrial)
- g. If applicable, what is the current shoreline master program designation of the site?
Not Applicable
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
No
- i. Approximately how many people would reside or work in the completed project?
Approximately 10 people will work in the completed facility.
- j. Approximately how many people would the completed project displace?
None
- k. Proposed measures to avoid or reduce displacement impacts, if any:
Not Applicable
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
Application and approval of jurisdictional permits.
- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:
Not Applicable

9. Housing [\[help\]](#)

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
None
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
None
- c. Proposed measures to reduce or control housing impacts, if any:
None

10. Aesthetics [\[help\]](#)

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest portion of the existing structure is approximately 32' tall. Principal building material is be metal.

- b. What views in the immediate vicinity would be altered or obstructed?

None

- b. Proposed measures to reduce or control aesthetic impacts, if any:

Paving of the site and installation of landscaping meeting jurisdictional requirements.

11. Light and Glare [\[help\]](#)

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Night time lighting will be produced by wall mounted lighting at the building perimeter and pole lighting in open areas.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

Not Anticipated

- c. What existing off-site sources of light or glare may affect your proposal?

Roadway lighting along 67th Avenue SE is present in the area. It is not anticipated this lighting will have a significant impact on the proposal.

- d. Proposed measures to reduce or control light and glare impacts, if any:

All lighting will be down-shielded and directed within the limits of the developed areas on the site.

12. Recreation [\[help\]](#)

- a. What designated and informal recreational opportunities are in the immediate vicinity?

The Centennial Trail runs adjacent to the property on the east side of 67th Avenue SE. Gleneagle golf course is located within the housing development to the east. Bill Quake Memorial park is located approximately ½ mile away to the northwest.

- b. Would the proposed project displace any existing recreational uses? If so, describe.

No

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None

13. Historic and cultural preservation [\[help\]](#)

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

No

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation?

This may include human burials or old cemeteries. Are there any material evidence, artifacts,

or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no known material evidence, artifacts, or areas of cultural importance on or near the site.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.
Research using online tools (GIS data and historical maps) did not indicate cultural or historical areas on or near the site.
- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
In the event that construction activities encounter historic or cultural artifacts, construction will be halted, and a qualified archeologist consulted. A jurisdictional form titled Unanticipated Discovery of Cultural Recourses and Human Skeletal Remains form has been submitted to the city which addresses procedures if these items are found.

14. Transportation [\[help\]](#)

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.
The site is adjacent to 67th Avenue SE. Access is currently provided via a driveway shared with the building to the north off of 67th Avenue.
- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?
The nearest bus stop is approximately 1 mile north of the site.
- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?
Parking at the site is currently provided within the existing gravel areas that surround the building. New paving will be installed that will accommodate parking for approximately 70 stalls.
- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).
None proposed
- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No
- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

There will be no change to the existing structure's size or applicable land use category. The building is therefore not anticipated to generate any additional trips from what was previously approved and operating at the site. See the memorandum prepared by Kimley Horn dated August 31, 2023

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No

h. Proposed measures to reduce or control transportation impacts, if any:

None

15. Public Services [\[help\]](#)

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Minimal impact to public services could be expected. Likely impacts will be the use of fire and police protection.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Impact fees as may be required at issuance of building permits. Additional impacts will be addressed through taxes and special levies as they occur.

16. Utilities [\[help\]](#)

a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

All utilities are available along adjacent streets.

Electricity:	PUD #1 of Snohomish County
Water:	City of Arlington
Sewer:	City of Arlington
Natural Gas:	Cascade Natural Gas Corporation
Telephone & Cable:	Frontier, Comcast
Trash & Recycle:	Waste Management Northwest

C. Signature [\[HELP\]](#)

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Name of signer Adam B. Clark

Position and Agency/Organization Architect - ZB12 architecture

Date Submitted: 30 Nov 2023

D. Supplemental sheet for nonproject actions [\[HELP\]](#)

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.