



June 1, 2022  
Project No. 220602

Scott Miller  
Jackson District Office  
Air Quality Division  
Michigan Department of Environment, Great Lakes, and Energy  
State Office Building, 4<sup>th</sup> Floor  
301 East Louis Glick Highway  
Jackson, MI 49201-1535

**Response to the Violation Notice Dated May 26, 2022**  
**Crimson Holdings (SRN E8117)**  
**Adrian, Michigan**

Dear Scott:

On May 26, 2022, EGLE-AQD issued a Violation Notice (VN) to Crimson Holdings, LLC alleging a violation of Permit to Install (PTI) 38-06. The specific allegations cited in the VN are as follows.

Process Description	Rule/Permit Condition Violated	Comments
Powdered Egg Manufacturing Facility	R 336.1201	The change from milk to powdered egg production has resulted in a meaningful change in air emissions. No permit modification has been received for PTI 38-06.
Powdered Egg Manufacturing Facility	R 336.1901(b)	On May 23, 24, and 25, 2022, EGLE-AQD staff followed up on several complaints that were received concerning odors (and potential health effects) coming from this facility and were able to verify that these odors were a violation of Rule 901(b).

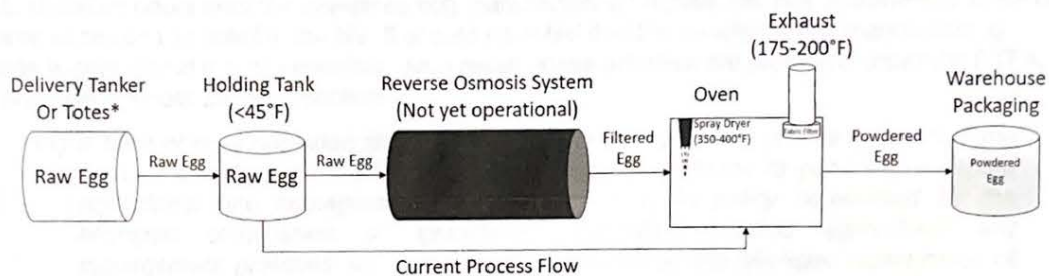
As requested, this letter provides information regarding the referenced citations, including: the date the alleged violations occurred; an explanation of the causes and duration of the alleged violations; whether the violations are ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the violations; the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

## Background

For several years, the Dairy farmers of America (DFA) operated a facility to produce powdered milk, which was permitted under PTI 3806. The process used to produce powdered milk in a very similar manner to the current process for making powdered eggs. Liquid eggs are shipped to the site in tankers and totes. Once a tanker or tote is emptied, the liquid eggs are transferred to holding tanks that vent

inside the facility. If totes cannot be received immediately, they are stored at a temperature less than 45°F until they can be emptied. Crimson Holdings is installing a reverse osmosis system to remove water before it is transferred to the spray dryer; however, that system is not yet operational. The liquid eggs are also pasteurized before entering the spray dryer. The spray dryer atomizes the liquid eggs into a hot air stream (350-400°F). By controlling the size of the droplets, air temperature, and air flow, it is possible to evaporate nearly all the moisture from the eggs at relatively low temperatures. After the eggs are dried into powder, it is cooled in a system of cyclones. The spray dryer has a fabric filter to reduce emissions and to ensure that food product is not deposited around the plant where it could attract rodents or other pests. The powder flows through the dryer and the conveying system in the same way that powdered milk would. The powdered eggs are then bagged and shipped for use in pet food.

Figure 1 - Process Flow Diagram



\*If totes are not immediately emptied, placed in storage (<45°F).

As we discussed, this is a food product; Crimson Holdings conducts quality testing of the raw material prior to receipt. Loads will be – and have been – rejected if the initial quality testing is not acceptable. In addition, testing of the final product is done to ensure it meets customer and company standards.

## Rule 201

The VN alleges that Crimson Holdings violated Rule 201 in using its spray dryer to dry eggs instead of milk. Crimson Holdings is not in agreement. First, the language suggests that a *meaningful change in air emissions* occurred. To demonstrate that no meaningful change occurred according to *Permit Exemption for Changes in a Process or Process Equipment That Are Not a Meaningful Change or a Meaningful Increase In Toxic Air Contaminants (AQD-025)*, a comparison of the toxic air contaminants (TACs) emitted before and after the change is needed. However, no TACs are emitted from the manufacture of powdered milk or powdered eggs. In particular, the definition of toxic air contaminant specifically excludes animal and plant materials used in food products. No comparison can be made as neither process emits TACs according to Rule 120(f)(v). In addition, it is expected that using the same fabric filter dust collector with the powdered egg manufacturing process as was used for the powdered milk manufacturing process would lead to emissions that are exactly the same. Switching from powdered milk to powdered eggs should not require a new PTI, as the process and raw materials are essentially the same – as outlined in Attachment 1, which was included with Crimson Holdings' initial request to transfer the permit. It should also be noted that the original permit application suggested that the entire manufacturing process would likely be exempt under Rule 285(dd)(iii) and Fishbeck could also argue that the operation is exempt under Rule 291.

It should also be noted that the definition of **air pollution** included in Rule 101(h) and in 1994 PA 451, MCL 324.5501 to 324.5542, states that *Air pollution does not mean those usual and ordinary odors associated with a farm operation if the person engaged in the farm operation is following generally*

*accepted agricultural and management practices.* Crimson Holdings is a farm operation and considers odors associated with the manufacture of powdered eggs an ordinary odor associated with eggs. The facility has an excellent operation and maintenance plan and has voluntarily adopted additional Food and Drug Administration safety standards.

That being said, because changes are needed to the stack and because Crimson Holdings will submit its Odor Management Plan outlining its compliance with the Michigan Right to Farm Act (RTFA), Crimson Holdings will apply for a PTI by the end of June including its Odor Management Plan along with information on the modified stack and the use of any odor neutralizers. A list of action items and their approximate dates is included As Attachment 2.

### **Rule 901(b)**

EGLE identified odors from the powdered egg manufacturing process and has documented these odors on three occasions as listed in the NV. It should be noted that the powdered egg manufacturing process is considered a *farm operation*.<sup>1</sup> As a result, these activities are protected under the RTFA. The RTFA explains, under 286.473 Section 3:

*(1) A farm or farm operation shall not be found to be a public or private nuisance if the farm or farm operation alleged to be a nuisance conforms to generally accepted agricultural and management practices according to policy determined by the Michigan commission of agriculture. Generally accepted agricultural and management practices shall be reviewed annually by the Michigan commission of agriculture and revised as considered necessary.*

The Michigan Department of Agriculture and Rural Development (MDARD) has requested a copy of the facility's Odor Management Plan. A copy of this Odor Management Plan will be submitted to EGLE and will include activities undertaken at the site to reduce odors from processing eggs.

It should be noted that EGLE has questioned the use of lactic acid in treating the eggs prior to or after drying. Neither lactic acid nor any other additive is added to either the liquid eggs or to the powdered eggs at Crimson Holdings. Lactic acid is often added to liquid eggs before drying as it improves the texture of the egg white. It is even thought that lactic acid may reduce serum cholesterol in eggs.<sup>2</sup> However, no additives are currently in use at Crimson Holdings as the powdered eggs are used in pet food and there is no need to improve the flavor nor improve the texture prior to facilitate its end use.

### **Action Plan**

As we continue to monitor and enact our Action Plan, we have assembled the following list of additional activities the facility has planned to address odors:

Both EGLE and Fishbeck noted that the exhaust stack should vent unobstructed, vertically upwards. The current configuration allows odors to sweep over the building toward Church Street, rather than dissipating further out. In early April, we met with the Marriott Walker Corporation, who completed an initial engineering analysis and who have recommended increasing the stack height to 16 feet above the rooftop. The new stack design has been approved and the engineering firm is aligning with a fabricator or installer to obtain quotes and timelines. Unfortunately, no matter how quickly we move, the supply chain challenges are significant and we cannot definitively predict when materials will be available or the stack will be available for installation. We believe this is an important part of a long-term plan to eliminate odors.

<sup>1</sup> <http://www.legislature.mi.gov/documents/mcl/pdf/mcl-Act-93-of-1981.pdf>

<sup>2</sup> [Lactic-fermented egg white reduced serum cholesterol concentrations in mildly hypercholesterolemic Japanese men: a double-blind, parallel-arm design - PubMed \(nih.gov\)](#)

Preliminary modeling demonstrates roughly an 80% reduction in the impacts of the odors with the new stack compared to the old stack. Information on the modeling and its impact on odors is provided in Attachment 3.

We also have two trial odor neutralizers onsite that are ready for use upon installation of the fogging system. We will test these odor neutralizers and monitor the resulting odors coming from the facility to determine the effectiveness of the treatment. It should be noted that we may have to vary the dilution and application rates to determine the most effective treatment option. An analysis on the materials were conducted and they are in compliance with EGLE's air permitting exemption rules. Once we are finished testing, we will select one of the materials and are committed to its continued use to mitigate odors. Information on the odor neutralizers and fogging system will be submitted under separate cover. Since starting the use of an odor neutralizer, a reduction in complaints has already been noted.

The odor neutralizer is currently applied with a Lafferty pump-fed fogging system. It is in a temporary location but can be installed on a permanent basis. We are currently using a Chemtreat OC9118 chemical to treat the exhaust. Attachment 4 presents information on the OC9118.

On May 25, 2022, we sent a letter to the editor of the Adrian Telegram; on May 28, the paper published an article describing our facility and our efforts to reduce odors.

We have created a website to allow residents to file complaints and allow us to communicate ongoing activities. The link to the website is: <https://forms.office.com/r/wHwY9TzZxy>

In addition, during EGLE's visit to the facility on Thursday May 28, 2022, you requested that we perform some additional activities to resolve this issue:

EGLE believes that the dissolved air flotation (DAF) system in the wastewater treatment plant may still be a source of odors. We plan to review its operation as well as conducting additional investigation as to whether some of the odors on Church Street could stem from the DAF. If the DAF operation could be improved, either by the more frequent removal of solids, the use of carbon filters on storage tanks or room exhaust, or changing our housekeeping practices, we will immediately make the required changes. Because the use of any additives may require the approval of the City of Adrian's Wastewater Treatment Plant Superintendent, we will also speak with him.

To effectively eliminate the possibility that the odors could cause health effects, EGLE has requested stack testing. Crimson Holdings is working with a test company to come up with a plan to sample for total volatile organic compounds (VOCs), amines, and sulfides as identified in your emails last week. We will submit our test plan this week, under separate cover and hope to perform stack testing next week. If you have any questions, please contact me at [dhofbauer@crimsonhldg.com](mailto:dhofbauer@crimsonhldg.com) (517.208.0904) or our environmental consultant, Lillian Woolley, of Fishbeck, at [lwoolley@fishbeck.com](mailto:lwoolley@fishbeck.com) (586.489.6876).

Sincerely,



Dan Hofbauer  
Plant Manager

By email

Copy: Jenine Camilleri – EGLE-AQD  
Mark Kovalchick – EGLE-AQD  
Stephanie Weems – EGLE-AQD

# Attachment 1

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## Investment Opportunities in Powdered Egg Production



With the emergence of food security as one of the most important issues of the millennium, it has become more crucial than ever to develop new methods of food preservation to prevent wastage. Dehydration is one such method which helps preserve food products, including fruits and vegetables, dairy and meat for extended periods of time.

An article in the Persian daily Forsat-e Emrouz focuses on investment opportunities in the production of dried (powdered) and pasteurized liquid egg.

Powdered egg is a fully dehydrated egg. It is made by using spray drying in the same way that powdered milk is made. The major advantages of powdered egg over fresh egg are the price, reduced weight per volume of whole egg equivalent and the long shelf life. Other

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# Attachment 2

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## Attachment 2 - Action Items

Response to Violation Notice Dated May 26, 2022

Crimson Holdings, LLC

Date	Action Item
4/25/2022	Acquired information on the fogging system from Chemtreat - system was ordered
5/4/2022	Contacted EGLE about additional odor neutralizers - contacted SolutioTek
5/5/2022	Spoke with Marriott Walker about stack modification options
5/5/2022	Ordered OC9118 (Chemtreat odor neutralizer) - requested that it be expedited
5/12/2022	Found the WWTP room ventilation fan was pulling air from the discharge pit due to closed fresh air vent when State was onsite - opened fresh air vent
5/12/2022	Fogging system shipped to facility - began ordering additional hoses, etc. to install on roof
5/12/2022	Repaired the carbon filter enclosure on the sludge tank ventilation fan
5/12/2022	Site visit by Marriott Walker - review final options and measurements of area, define scope of work
5/13/2022	Sent email update to EGLE - requested additional information on complaints to assist with identifying potential sources and solutions
5/13/2022	Approved new stack drawing - asked for costs, fabrication and construction schedule from Marriott Walker
5/13/2022	Approved new stack design and requested a schedule for fabrication and installation
5/13/2022	Established website and online form for complaints
5/13/2022	Letter to City of Adrian outlining plan to address odors
5/18/2022	Sent drawing of stack changes to EGLE
5/20/2022	Ordered chlorine dioxide - requested that it be expedited (ChemTreat recommends the OC9118 and cannot deliver chlorine dioxide)
5/17/2022	Set up website and online updated / complaint form
5/20/2022	Fogging system delivered to the facility - began ordering additional parts for installation
5/20/2022	Letter to Daily Telegram sent - Daily Telegram follows with article
5/20/2022	Reviewed a total of five (5) different odor masking agents/neutralizers
5/27/2022	Brought Chemtreat onsite to assist with setting up system
5/27/2022	Began injecting the OC9118 material with good results. Its still in use with changes being made to injection rates as needed.
5/27/2022	Received stack modification quote from Marriott Walker
6/2/2022	Established stack testing protocol and submitted list of proposed components
6/2/2022	Corporate approval of exhaust stack modifications
6/2/2022	Marriott Walker given approval to initiate the the stack project modifications. Waiting on tentative fabrication and installation schedule.



# Attachment 3

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## 1.0 Air Quality Modeling Evaluation – Existing and Proposed Stack Comparison

Crimson Holdings, LLC has proposed stack modifications to reduce the occurrence of odors from the egg drying process in areas surrounding the facility. Specifically, Crimson Holdings is proposing to modify the existing horizontally discharged stack to make the stack vertically discharged at a height approximately 16 feet above the roof height where the stack is located. Fishbeck used the model to compare a unitized emission rate from each stack configuration to determine the percent reduction in impacts. The air dispersion modeling discussion for Crimson Holdings is described in the following sections.

### 1.1 Model Selection

The model selected for the air dispersion analysis was American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), Version 21112. Effective December 9, 2005, AERMOD was established as the U.S. Environmental Protection Agency (USEPA) preferred air dispersion model for steady state operations. AERMOD is a modeling system which incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources and both simple and complex terrain.

BEE line software, which incorporates the USEPA algorithm for the AERMOD program, was used. The software, referred to as BEEST, Version 12.07, was developed by Providence Engineering and Environmental Group, LLC.

### 1.2 GEP Stack Height Analysis

Prior to running the air dispersion model, the potential for building downwash to affect the plume must be evaluated. Building downwash represents the effect that nearby structures have on the air flow near the stack. If the stack is within the area of influence of the building, the swirls and eddies caused by obstruction of the air flow near buildings can affect the plume dispersion.

The Good Engineering Practice (GEP) Analysis was performed using software developed by Providence Engineering and Environmental Group, LLC. The software includes the USEPA Building Profile Input Program (BPIP) Prime Code for calculating projected building widths. This analysis was run for all buildings on site. The highest calculated GEP stack height of any structure was 113.5 feet (34.61 meters). GEP stack height is the greater of GEP formula stack height or 65 meters (213.3 feet). The stack height listed in Table 2-1 is less than the GEP stack height; therefore, direction specific building effects calculated for each wind direction were entered into the dispersion model as described in the following section.

### 1.3 Model Input Parameters

Table 2-1 provides the source characteristics used in the model. The input parameter emission rate was 1 pound per hour (lb/hr) for each stack; therefore, the model output is in units of micrograms per cubic meter per pound per hour ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ ). Michigan Department of Environment, Great Lakes, and Energy (EGLE) does not have an official policy regarding odor modeling. However, historically, EGLE has doubled the 1-hr impact to approximate a 10-minute impact to compare to the odor threshold. Though we would need to have emissions information on the specific odorous compound to complete that comparison.

The direction specific building dimensions calculated during the GEP stack height analysis were entered into the model.

The modeling area is relatively flat; however, actual terrain data were used in the model. Because the concern is odors off of the property, receptors were placed at 25-meter intervals around the property. Dense grids of 25-meter and 50-meter intervals surround the property out to a distance of approximately 1 kilometer. Maximum impacts occur close to the property.

Terrain elevations at receptors were obtained using BEE Line Software's BEEST program and U.S. Geological Survey (USGS) National Elevation Dataset (NED) 1/3 arc second data. BEEST implements the AERMAP model (Version 18081),<sup>1</sup> which includes processing routines that extract NED data to determine receptor terrain elevations for air quality model input. The NED data used in the modeling had a resolution of 10 meters (1/3 arc second) and North American Datum of 1983 (NAD83).

The meteorological data used in the model was 1 minute data from Adrian for year 2021. The meteorological data was provided by EGLE via email because of technical difficulties with their website. The data was processed using the ADJ\_U\* option in AERMET (Version 21112).<sup>2</sup> The adjust U\* option was incorporated in Version 12345 of AERMET and adjusts the surface friction velocity under low wind/stable conditions, because AERMOD was found to overpredict impacts at these conditions.

## 1.4 Results of Modeling Analysis

The model input parameter emission rate was 1 lb/hr; therefore, the results are in units of  $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ . A summary of the results from the AERMOD model run are presented in Table 2-1. The unofficial policy from EGLE of multiplying the 1-hour impact from the model by 10 to determine the odor impact based on the unitized emission rate was used to compare the results from the existing stack to the proposed stack configuration. As shown in the table, the proposed stack configuration will reduce odor impacts approximately 80%.

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<sup>1</sup> AERMAP is an AERMOD Terrain Preprocessor

<sup>2</sup> AERMET is an AERMOD Meteorological Preprocessor

**Table 3-1 Model Input**

Response to Violation Notice Dated May 26, 2022

Crimson Holdings, LLC, Adrian, MI

Source	Model Name	Discharge Type	NAD 83 UTM Coordinates (m)		Base Elevation (feet)	Stack Height (feet)	Exhaust Temperature (°F)	Exhaust Flow Rate (acfm)	Exit Velocity (fps)	Stack Diameter (inches)	Unitized Emission Rate (lb/hr)
			Easting	Northing							
Existing Stack	EX_STACK	horizontal	747,405	4,642,562	802.7	42.5	150	28,000	23.77	60.0	1
New Stack	NW_STACK	vertical	747,405	4,642,562	802.7	49	150	28,000	23.77	60.0	1

**Model Results**

Source	Model Name	1-hour Model Impact ( $\mu\text{g}/\text{m}^3$ )/ (lb/hr)	10-minute Odor Impact ( $\mu\text{g}/\text{m}^3$ )/ (lb/hr)	Reduction
Existing Stack	EX_STACK	879.3	8,793.1	NA
New Stack	NW_STACK	168.5	1,685.2	81%

Note - Results are on a unitized basis based on 1-lb/hr emitted and do not represent actual impacts.

# Attachment 4

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## ODOR CONTROL–ODOR NEUTRALIZER OC9118

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### GENERAL DESCRIPTION

CHEMTREAT OC9118 is a highly effective concentrated multicomponent blend of odor neutralizing compounds. OC9118 is specifically formulated to eliminate nuisance odors when applied using mist spray technology. Unlike masking agents that overwhelm the malodor and actually increase overall odor intensity, OC9118 decreases overall odor intensity.

### TYPICAL PHYSICAL PROPERTIES

Form:	Clear, pink liquid
Odor:	Moderate
Viscosity:	< 100 CPS @ 20° C
pH:	~7.2
Specific Gravity:	1.003 @ 20°C
Density:	8.37 lbs/gal
Freeze Point:	32°F

*\*Please see the OC9118 SDS for specifics regarding safety and handling.*

### FEEDING, DOSAGE AND CONTROL

#### ***Feed System***

OC9118 is pre-mixed with water and fed at a typical dilution rate of 1 part product to 200–300 parts of water. The solution must be delivered through a properly designed feed system to ensure desired efficacy. Proper atomization of vapor allows intimate and thorough mixing with the malodor. ChemTreat representatives are trained to assist with specific applications.

## ***Dosage***

The dosage of **OC9118** depends on the level of nuisance malodor. Feed rates should be established with the guidance of a ChemTreat representative. Store above freeze point. If **OC9118** freezes, then thaw and mechanical mixing is required.





# SAFETY DATA SHEET

## Section 1. Chemical Product and Company Identification

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<b>Product Name:</b>	ChemTreat OC9118
<b>Product Use:</b>	Odor Control
<b>Supplier's Name:</b>	ChemTreat, Inc.
<b>Emergency Telephone Number:</b>	(800)424-9300 (Toll Free)
<b>Address (Corporate Headquarters):</b>	5640 Cox Road Glen Allen, VA 23060
<b>Telephone Number for Information:</b>	(800)648-4579
<b>Date of SDS:</b>	February 7, 2019
<b>Revision Date:</b>	February 7, 2019
<b>Revision Number:</b>	19020701AN

## Section 2. Hazard(s) Identification

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<b>Signal Word:</b>	None
<b>GHS Classification(s):</b>	Non-Hazardous Substance
<b>Hazard Statement(s):</b>	Non-Hazardous Substance
<b>Precautionary Statement(s):</b>	No significant health risks are expected from exposures under normal conditions of use.
<b>Prevention:</b>	None.
<b>Response:</b>	None.
<b>Storage:</b>	None.
<b>Disposal:</b>	None.
<b>System of Classification Used:</b>	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Hazards Not Otherwise Classified:</b>	None.



### Section 3. Composition/Hazardous Ingredients

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Component	CAS Registry #	Wt. %
Components not listed are either non hazardous or in concentration of less than 1%	N/A	N/A

**Comments** If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

### Section 4. First Aid Measures

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**Inhalation:** Call a POISON CENTER or doctor/physician if you feel unwell.

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

**Skin:** Call a poison center or doctor/physician if you feel unwell.

**Ingestion:** Rinse mouth. Call a poison center or doctor/physician if you feel unwell.

**Most Important Symptoms:** N/D

**Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:** N/A

### Section 5. Fire Fighting Measures

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**Flammability of the Product:** Not flammable.

**Suitable Extinguishing Media:** Use extinguishing media suitable to surrounding fire.

**Specific Hazards Arising from the Chemical:** None known.

**Protective Equipment:** If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

## Section 6. Accidental Release Measures

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<b>Personal Precautions:</b>	Use appropriate Personal Protective Equipment (PPE).
<b>Environmental Precautions:</b>	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
<b>Methods for Cleaning up:</b>	Contain and recover liquid when possible. Flush spill area with water spray.
<b>Other Statements:</b>	None.

## Section 7. Handling and Storage

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<b>Handling:</b>	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
<b>Storage:</b>	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Protect from heat and sources of ignition. Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.

## Section 8. Exposure Controls/Personal Protection

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### Exposure Limits

Component	Source	Exposure Limits
Components not listed are either non hazardous or in concentration of less than 1%	N/E	N/E

<b>Engineering Controls:</b>	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.
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## Personal Protection

<b>Eyes:</b>	Safety glasses are recommended if risk of eye contact.
<b>Skin:</b>	Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
<b>Respiratory:</b>	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

## Section 9. Physical and Chemical Properties

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<b>Physical State and Appearance:</b>	Liquid, Pink, Clear
<b>Specific Gravity:</b>	1.003 @ 20°C
<b>pH:</b>	7.2 @ 20°C, 100.0%
<b>Freezing Point:</b>	32°F
<b>Flash Point:</b>	N/A
<b>Odor:</b>	Moderate
<b>Melting Point:</b>	N/A
<b>Initial Boiling Point and Boiling Range:</b>	>212°F
<b>Solubility in Water:</b>	Complete
<b>Evaporation Rate:</b>	N/D
<b>Vapor Density:</b>	N/D
<b>Molecular Weight:</b>	N/D
<b>Viscosity:</b>	<100 CPS @ 20°C
<b>Flammability (solid, gas):</b>	N/D
<b>Flammable Limits:</b>	N/A
<b>Autoignition Temperature:</b>	N/A
<b>Density:</b>	8.37 LB/GA
<b>Vapor Pressure:</b>	N/D
<b>% VOC:</b>	N/D
<b>Odor Threshold</b>	N/D
<b>n-octanol Partition Coefficient</b>	N/D
<b>Decomposition Temperature</b>	N/D

## Section 10. Stability and Reactivity

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<b>Chemical Stability:</b>	Stable at normal temperatures and pressures.
<b>Incompatibility with Various Substances:</b>	Strong oxidizers.
<b>Hazardous Decomposition Products:</b>	Oxides of carbon.
<b>Possibility of Hazardous Reactions:</b>	None known.
<b>Reactivity:</b>	N/D
<b>Conditions To Avoid:</b>	N/D

## Section 11. Toxicological Information

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### Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
ChemTreat OC9118	N/D	N/D	N/D	N/D

### Carcinogenicity Category

Component	Source	Code	Brief Description
Components not listed are either non hazardous or in concentration of less than 1%	N/E	N/E	N/E

**Likely Routes of Exposure:** N/D

### Symptoms

**Inhalation:** N/D

**Eye Contact:** N/D

**Skin Contact:** N/D

**Ingestion:** N/D

**Skin Corrosion/Irritation:** N/D



Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

    Single Exposure: N/D

    Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

## Section 12. Ecological Information

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### Ecotoxicity

Species	Duration	Type of Effect	Test Results
N/D	N/D	N/D	N/D

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: Not tested.



### Section 13. Disposal Considerations

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

### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

### Section 15. Regulatory Information

#### Inventory Status

United States (TSCA):  
Canada (DSL/NDSL):

All ingredients listed.  
All ingredients listed.

#### Federal Regulations

##### SARA Title III Rules

##### Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

#### Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Components not listed are either non hazardous or in concentration of less than 1%	N/A	N/A	N/A

Comments: None.



## State Regulations

**California Proposition 65:** None known.

## Special Regulations

Component	States
Components not listed are either non hazardous or in concentration of less than 1%	None.

## Compliance Information

**NSF:** N/A

**Food Regulations:** N/A

**KOSHER:** This product has not been evaluated for Kosher approval.

**Halal:** This product has not been evaluated for Halal approval.

**FIFRA:** N/A

**Other:** None

**Comments:** None.

## Section 16. Other Information

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### HMIS Hazard Rating

<b>Health:</b>	0
<b>Flammability:</b>	0
<b>Physical Hazard:</b>	0
<b>PPE:</b>	X

**Notes:** The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.  
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.



## Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

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