ARKANSAS
ENERGY & ENVIRONMENT

January 3, 2023

Via Email Only to: preston.hernandez@tyson.com
rechelle.hollowaty@tyson.com

Preston Hernandez
Complex Environmental Manager
Tyson Chicken, Inc. - Hope Processing
275 County Road 278
Hope, AR 71801

RE: Application for Registration
AFIN: 29-00035; Registration No.: 1291-A-REG315

Dear Mr. Hernandez,

The Division of Environmental Quality has reviewed your facility's application for registration for the facility located at 275 County Road 278, Hope in Hempstead County, Arkansas.

The Division of Environmental Quality has determined that the information certified in the application fulfills the required criteria for registration as specified in Arkansas Air Pollution Control Code (Rule 18), Rule 18.315 and other applicable regulations. Your registration number has been assigned as 1291-A-REG315.

This registration is your authority to construct, operate, and maintain the equipment and/or control apparatus as set forth in your registration request received on December 13, 2022. Tyson Chicken, Inc. - Hope Processing is required to update this registration should the facility operations or emissions change so that the current registration no longer reflects actual operations.

Please maintain a copy of this letter and the application at the facility.

Sincerely,

Thomas Rheaume

Thomas Rheaume, P.E.
Senior Operations Manager, Office of Air Quality, Division of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118-5317

c: Compliance Monitoring

Attachment: Registration Application

Air Application for Registrations, Minor Source Permits, or Title V Permits

version 1.40

(Submission #: HPP-WG4S-F4VYC, version 1)

Details

Submission Alias	Hope Processing Plant Air Registration
AFIN	29-00035
Submission ID	HPP-WG4S-F4VYC
Submission Reason	Modification

Form Input

General Information

AFIN, Application Type, Current Registrations or Air Permits, and Changes

Indicate below the Arkansas DEQ Facility Identification Number (AFIN) if one has already been assigned; if this application is for a Registration, Minor Source air permit, or a Title V/Major Source air permit; the type of application; list any active registration or air permit numbers; and clearly and concisely indicate the changes associated with this application.

Specifically identify all changes requested in this application in the paragraph box below. Identify any physical modifications, including increases in the amount or type of throughputs, fuel use, control equipment, or other factors affecting emissions. Also, specifically identify any other requested changes to the permit or permit conditions, including but not limited to recordkeeping requirements, testing, monitoring, etc. Because of the complexity of permits, any changes not listed in the paragraph box below may not be reviewed or incorporated into the draft permit.

Arkansas DEQ Facility Identification Number (AFIN)
29-00035

Select the Type of Permit
Registration

Select the Type of Registration Application
Registration Modification

List All Changes and Revised Sources Associated with this Application or Indicate "None"
Including Sulfuric Acid emission from the use of a sulfuric acid solution in the evisceration dip tanks for anti-microbial intervention.

List Current Active Registration or Air Permit Number for the Facility (If Applicable)
1291-A-REG315

Dates of Construction/Reconstruction

If the facility is a new facility or the modifications to the facility involve construction of new emission units or reconstruction, enter the proposed construction or reconstruction and operation dates. If a modification does not involve construction of new emission units or reconstruction, do not enter any dates. [Note: Except for Registrations, permits are generally required before any construction may commence. Contact the Office of Air Quality for more information and exceptions.]

Expected Date of Commencement of Construction or Reconstruction
NONE PROVIDED

Expected Date of Completion of Construction or Reconstruction
NONE PROVIDED

Expected Date of Operation
NONE PROVIDED

Air Application Contact Information

In many cases, the person who prepared and is most knowledgeable about the application is someone other than the facility mailing contact. The air application contact's email will be copied on correspondence sent to the facility regarding this submission. This contact will only be used for this ePortal submission. If this section is blank and the Office of Air Quality requires additional information, we will contact the person listed as the facility mailing address contact.

Air Application Contact Information

Air Application Contact

Prefix
Mr.

First Name	Last Name
Preston	*Hernandez*

Title
Complex Environmental Manager

Organization Name
Tyson Foods, Inc.

Phone Type	Number	Extension
Home	870-777-7362	

Email
preston.hernandez@tyson.com

Fax
NONE PROVIDED

Air Application Contact Address

275 County Road 278
Hope, AR 71801
United States

Federal Regulations Applicability

Indicate the applicability of the listed federal regulations.

Are there any 40 C.F.R. ⬚⬚ 60, 61, or 63 federal regulations that are applicable to this application?
No

Applicant Information

Facility Information

Please provide the following information about the facility.

Legal Name - Facility Name
Tyson Chicken, Inc. Hope Processing

North American Industry Classification System (NAICS)
Please provide the NAICS codes and descriptions for your facility.
Click here to search for and review the NAICS Codes via the Census Bureau NAICS Lookup

Primary NAICS Code and Description
311615 - Poultry Processing

Secondary NAICS Code and Description
NONE PROVIDED

Tertiary NAICS Code and Description
NONE PROVIDED

Facility Physical Address

Physical Address
275 County Road 278
Hope, AR 71801

Facility Physical County
Hempstead

Facility Physical Location Latitude and Longitude
33.740138,-93.61456

Facility Mailing Address

Mailing Contact

Prefix
Mr.

First Name	Last Name
Preston	*Hernandez*

Title
Complex Environmental Manager

Organization Name
NONE PROVIDED

Phone Type	Number	Extension
Business	870-777-7362	

Email
preston.hernandez@tyson.com

Fax
NONE PROVIDED

Mailing Address
275 County Road 278
Hope, AR 71801
United States

Additional Facility Email Contact

If you want an additional facility contact to be included on emails of correspondence for this facility, please enter their email address below. This contact should be facility personnel only.

Enter the Additional Facility Email Contact
rechelle.hollowaty@tyson.com

Billing Information

Please provide the following information for the Billing contact for this application.

Billing Information

Billing Contact

Prefix
NONE PROVIDED

First Name	Last Name
Stephanie	*Hendricks*

Title
Administrative Coordinator for EHS

Organization Name
Tyson Foods, Inc.

Phone Type	Number	Extension
Business	479-290-4713	

Email
stephanie.hendricks@tyson.com

Fax
NONE PROVIDED

Billing Address

2200 W Don Tyson Pkwy

Springdale, AR 72762

United States

Organizational Information

Please provide the following information for the applicant. If the applicant is a Corporation, Limited Liability Company, Limited Partnership, or Cooperative; your legal name must exactly match the name registered with the Arkansas Secretary of State. Please use the following link to reference the Secretary of State registered name listing. The Secretary of State information is not required for Administrative Amendments.

All Corporations, Limited Liability Companies (LLC), Limited Partnerships (LP, LLP, and LLLP), and Cooperatives must be registered and in good standing with the Arkansas Secretary of State and the state of origin (if other than Arkansas).
Click here to view the Secretary of State registered name listing

Legal Organization
Corporation (Domestic or Foreign, includes for-profit, nonprofit, and corporation d/b/a company)

Enter the Arkansas Secretary of State's Filing Number
100166292

Indicate if the Applicant is chartered in Arkansas (i.e. domestic) or chartered in a state other than Arkansas (i.e. foreign). Refer to the State of Origin that is listed on the Arkansas Secretary of State's website for this applicant.
Foreign (Chartered Outside of Arkansas)

Attach the Current Proof of Good Standing from the State of Origin
Tyson Chicken, Inc. - DE 4.28.22.pdf - 12/13/2022 08:57 AM
Comment
NONE PROVIDED

Responsible Official Information

Provide the information below for the person under whose electronic signature or hardcopy signature this form will be certified when completed. This person must be a responsible official. For the definition of responsible official click the link below.
Click Here for the Definition of Responsible Official

Responsible Official

First Name	Last Name
Randy	*King*

Title
Complex Manager

Company or Agency of the Responsible Official
Tyson Chicken, Inc.

How Does the Person Certifying this Submission Qualify as a Responsible Official?
The person is a duly authorized representative that is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit (e.g., Plant Manager)

Attach the Delegation of Authority Letter
Tyson Chicken Inc.-Signatory Authority.pdf - 12/13/2022 09:00 AM
Comment
NONE PROVIDED

How Will the Responsible Official Certify this Submission?
An original hardcopy Certification of ePortal Submission form signed by the Responsible Official will be mailed or delivered to DEQ

Since the responsible official is not electronically signing this submission, please complete the Certification of ePortal Submission form. This form will be available under the Download/Export button on the Submission Overview page after you submit this submission. Mail the original signed form to the Division of Environmental Quality. Your submittal will not be considered complete until the original hardcopy certification is received.

Registration Information

Total Actual Emissions (Required for Registrations)

Enter the total actual emissions from the facility.

PM (tons per year)
9.57

PM10 (tons per year)
9.57

SO2 (tons per year)
0.04

VOC (tons per year)
21.41

CO (tons per year)
6.06

NOx (tons per year)
7.21

Lead (tons per year)
3.61E-5

Single Hazardous Air Pollutant (tons per year)
0.13

Total Hazardous Air Pollutants (tons per year)
0.14

Air Contaminants (tons per year)
0.02

Process Information

Process Description (Required for All Applications Except Administrative Amendments)

A written description of the process by NAICS number must accompany each application. This must include a description of each relevant piece of equipment and process. The description must be in sufficient detail to provide the permit engineer an understanding of the process. The applicant should place special emphasis on any process or equipment with the potential to emit any pollutants to the atmosphere. The process description should describe material flow between processes (if any) and the source (SN) to which each process is vented should be identified in the narrative. The applicant should describe any work practice standards used to control emissions. Attach the process description below.

Attach the Process Description

Hope Project Description Summary 12 12 22 (1).pdf - 12/13/2022 02:23 PM
Comment
NONE PROVIDED

Process Flow Diagram (Required for All Applications Except Administrative Amendments)

The process flow diagram must be in sufficient detail to understand the general process. The process flow diagram must clearly identify all relevant processes or pieces of equipment. All points where raw materials and/or chemicals are introduced into the process and all points where intermediate and/or finished products are removed from the process must be clearly identified with quantities of materials shown. The process flow diagram should show material flow between processes (if any) and the applicant should identify the source number (SN) on the diagram. Attach the process flow diagram below.

Attach the Process Flow Diagram

PFD.pdf - 12/13/2022 09:18 AM
Comment
NONE PROVIDED

Emission Information

Emission Calculations (Required for All Applications Except Administrative Amendments if No Changes to Emissions)

Provide detailed calculations for the emissions of the pollutants. The calculations must contain a detailed explanation of the source of the emission estimation. Please retain all sources in the emission calculations. While calculations are required for revised sources, calculations for all sources at the facility are preferred. Any calculations included in a spreadsheet format must also include a detailed sample calculation. Unless this is an Administrative Amendment that does not involve changes to emissions, attach the emission calculations below.

Additional instructions for the emission calculations may be found at the following link.
Click Here for More Instructions for the Emission Calculations

Attach the Emission Calculations

ADEQ Calcs for Hope Process Actual CY2021 (2022_12_22).xlsx - 12/13/2022 02:16 PM
Comment
NONE PROVIDED

Equipment Forms

Equipment Specifications (Required for All Applications Except Modifications that Do Not Involve New Construction or Do Not Change the Manner in which the Current Process Operates and Administrative Amendments)

Include engineering drawings, operating parameters, manufacturer's specifications, and other information as requested for each piece of equipment directly related to the emission of pollutants to the atmosphere. It is not necessary to submit specifications for equipment not relevant to air pollution. If this application involves new construction or changes the manner in which the current process operates or this is an initial or renewal application, attach any equipment specifications below.

Attach the Equipment Specifications

Assist SDS.PDF - 12/13/2022 02:11 PM
Comment
There are no equipment modifications other than chemical change.

Additional Information

Suggested Specific Conditions

If you have any specific conditions that you would like to propose, attach them below.

Attach Any Suggested Specific Conditions

NONE PROVIDED
Comment
NONE PROVIDED

Other Information

If you have any other information that you would like to submit for review, attach it below.

Attach Any Other Information

NONE PROVIDED
Comment
NONE PROVIDED

Modeling Information

DEQ will perform screening modeling for Criteria and Non-Criteria Air Pollutants. If you have information that you would like to submit regarding modeling, attach it below.

NAAQS

DEQ will perform screening modeling for Criteria Air Pollutants under the following circumstances. If potential issues are identified as a result of this modeling, the facility will be contacted for additional information and requirements.

Other than modeling for projects requiring Prevention of Significant Deterioration (PSD) dispersion modeling, a NAAQS evaluation is required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions for emission increases of:

-100 tpy or greater PM10, for the 24-hour PM10 NAAQS.
-100 tpy or greater SO2, for the 1-hour SO2 NAAQS. Modeling for the 3-hour SO2 NAAQS is not required.
-100 tpy or greater NOx, for the 1-hour NO2 NAAQS. Modeling for the annual NO2 NAAQS is not required.

Refer to the DEQ Air Permit Screening Modeling Instructions at the link below for further information.
Click Here for the DEQ Air Permit Screening Modeling Instructions

Non-Criteria Pollutants

DEQ will perform screening modeling for Non-Criteria Air Pollutants (Hazardous Air Pollutants and Others). If potential issues are identified as a result of this modeling, the facility will be contacted for additional information and requirements.

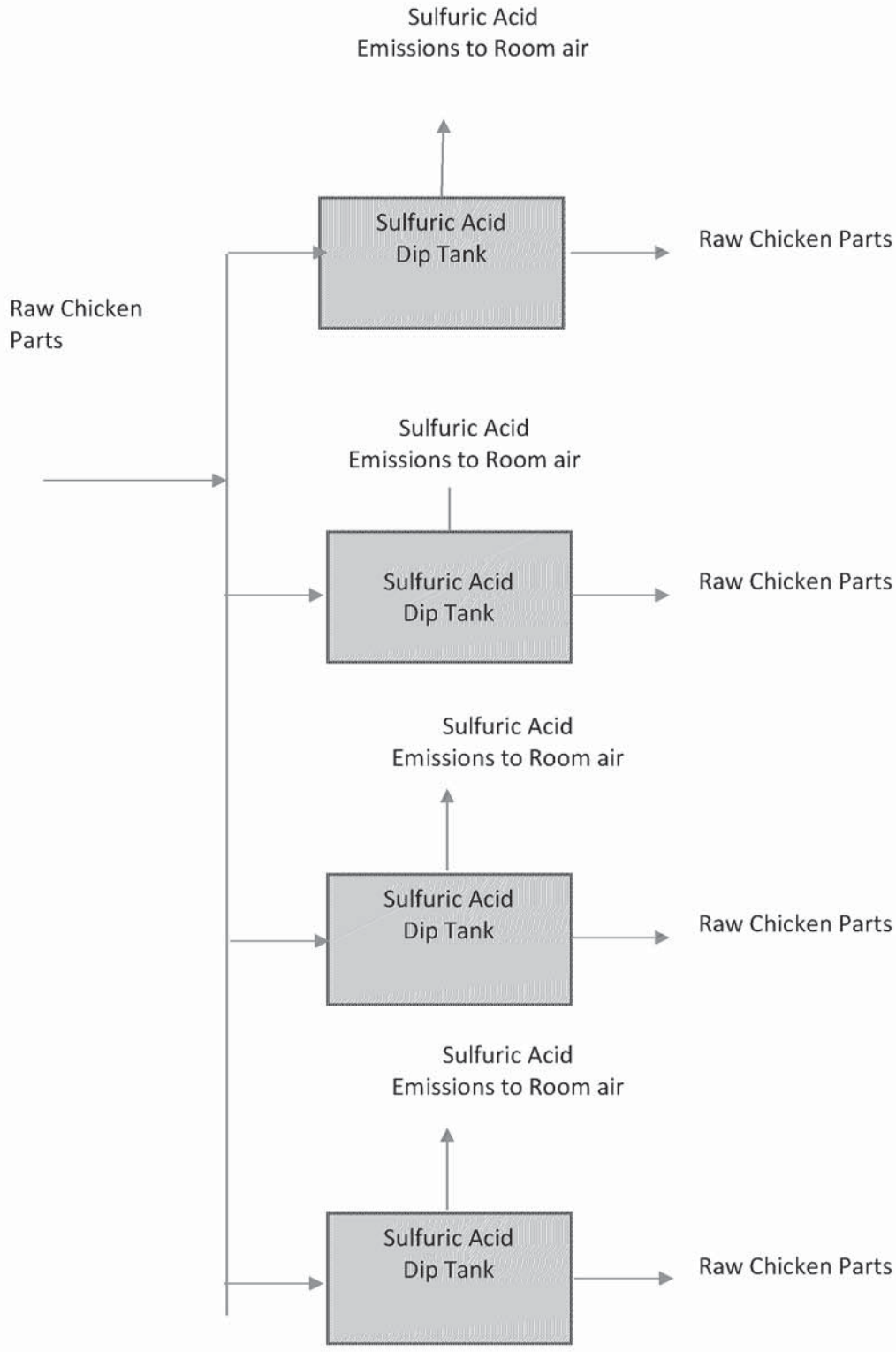
Refer to the NCAPCS implementation guidance at the link below for further information.
Click Here for the NCAPCS Implementation Guidance

Attach Any Modeling Information

NONE PROVIDED
Comment
NONE PROVIDED

Hope Assist Process Flow Diagram

12/12/2022



Tyson

November 17, 2022

To: File

RE: Signatory Authority

The Manager listed below is hereby authorized to serve as my delegated Responsible Official to sign permit applications, renewals and terminations required by permits, regulations and/or compliance plans for the location listed below:

Delegated Responsible Official			
Name	**Title**	**Legal Entity**	**Facility Address**
Randy King	Complex Manager	Tyson Chicken, Inc. Hope Processing Plant	275 County Road 278 Hope, AR 71801
Randy King	Complex Manager	Tyson Chicken, Inc. Hope Feed mill	100 Beech Street Hope, AR 71801
Randy King	Complex Manager	Tyson Chicken, Inc. Hope Hatchery	2510 Hwy 73 East Hope, AR 71801

The Manager listed below is hereby designated to serve as a Cognizant Official (or duly authorized representative) for signing reports, inspection certifications, etc., by environmental permits, regulations and other information requested by the ADEQ Director.

Delegated Cognizant Official			
Name	**Title**	**Legal Entity**	**Facility Address**
Joshua Williams	Plant Manager	Tyson Chicken, Inc. Processing Plant	275 County Road 278 Hope, AR 71801
Preston Hernandez	Environmental Manager	Tyson Chicken, Inc. Hope Feed mill	100 Beech Street Hope, AR 71801
Preston Hernandez	Environmental Manager	Tyson Chicken, Inc. Hope Hatchery	2510 Hwy 73 East Hope, AR 71801
Preston Hernandez	Environmental Manager	Tyson Chicken, Inc. Processing Plant	275 County Road 278 Hope, AR 71801

Regards,

Nathan McKay
Vice President Operations

PROJECT DESCRIPTION SUMMARY

Tyson Foods, Inc. owns and operates a harvesting and further processing facility in Hope (Hempstead County), Arkansas. The facility's NAICS number is 311615, poultry processing. The facility is updating the information for the registration. The actual emissions for CY2021 are calculated to be less than the permitting threshold under ADEQ Reg. 18.301, thus the facility is still applicable for registration. The source to be updated in the registration include the following:

- Use of Sulfuric Acid Solution (maximum 43%), SN-13; PTE emissions are estimated to be ~0.02 tpy

Tyson is requesting the registration remain active for Hope facility even though the CY2021 actual criteria pollutant emissions have dropped below the registration threshold. Plans are to increase production over the next few years and we will most likely exceed the threshold for PM10 of 10 tpy. Therefore, to eliminate a back and forth registration application, we would rather keep the existing registration in place.

PROCESS DESCRIPTION

Poultry Processing:
Caged live chickens are delivered to the harvest facility by truck. Approximately 268,800 chickens are processed each day, five days a week. The live birds are lifted manually from the conveyor and placed on a two shackle-like conveyance lines to be stunned, slaughtered, gutted, and inspected. The birds are then sent to a chiller where they are sized and placed in ice to be sent to cut-up or further processing at the facility. There are two (2) natural gas boiler SN-01 and SN-10 rated for 16.74 MMBtu/hr and 14.65, respectively. Two (2) high pressure direct contact natural gas water heater systems SN-02 and SN-03 rated for 15 MMBtu/hr and 17 MMBtu/hr respectively, are used to clean all of the equipment from the cage unloading area to the final bird chillers. There are 16 existing process heaters used to for both heating the facility as well as drying the facility after sanitation. The total heat input of the 16 heaters is approximately 22 MMBtu/hr.

The facility uses PAA (peracetic acid and acetic acid) solution as well as a sulfuric acid solution for antimicrobial intervention purposes.

Further Processing:
Raw chicken meat is removed from storage, weighed, and transported to margination tanks. From the marinating tanks, the product is frozen and diced. The diced product is battered, breaded, and fried in three (3) existing direct heated fryers SN-06, SN-07, and SN-12. SN-07 and SN-12 will employee a quick draft/wet demister device to reduce potential particulate by more than 95% to the atmosphere. The facility currently operates one (1) natural gas thermal fluid natural gas heater, SN-05 rated for 9.997 MMBtu/hr and will be installing an additional thermal fluid heater SN-11 rated for 4.99 MMBtu/hr.

Diesel and PAA Tanks:
There is one (1) 20,000-gallon diesel tank in operation at the facility for use in refilling diesel reefer units. As well, the facility has two (2) 400 gallon day tanks for PAA.

Cooling Towers:
Tyson operates nine (9) cooling towers for water condensing at the facility.

Cleaners and Sanitizers:
The facility uses several types of cleaners and sanitizers for both building that contain VOC.

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "TYSON CHICKEN, INC." IS DULY INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL CORPORATE EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-EIGHTH DAY OF APRIL, A.D. 2022.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL REPORTS HAVE BEEN FILED TO DATE.

AND I DO HEREBY FURTHER CERTIFY THAT THE FRANCHISE TAXES HAVE BEEN PAID TO DATE.

2791430 8300

SR# 20221684578

Authentication: 203300304

Date: 04-28-22

You may verify this certificate online at corp.delaware.gov/authver.shtml

Summary of Hope CY2021 Emissions updated 12/12/22

Facility is applicable to Registration

Equipment	NOx tpy	CO tpy	VOC tpy	PM tpy	PM10 tpy	SOx tpy	Total HAPS tpy	Total POM tpy	Total Sulfuric tpy
Natural Gas	7.21	6.06	0.40	0.55	0.55	0.04	0.14	8.70E-06	
Fryer Finished Production	-	-	19.00	3.48	3.48	-	-	-	-
Live Hang	-	-	-	0.04	0.04	-	-	-	-
Sulfuric Acid Solution									0.02
Diesel Tank			2.76E-03						
PAA Tanks			0.01						
PAA System			0.28						
Cleaners/Sani			1.71						
Cooling Towers				5.50	5.50				
Facility Total	7.21	6.06	21.41	9.57	9.57	0.04	0.14	0.00	0.02
Registration Threshold tpy actual	25-40	25-75	24-40	15-24 PM	10-15 PM10	25-40	Single HAP: 1-2; Total		

Facility is applicable to Registration

Natural Gas Fueled Equipment: Products of Combustion updated 9/22/22

The facility has numerous boilers, water heaters, thermal fluid heates, and process heaters. Natural gas is the only fuel used in this equipment. Equipment information and emissions estimates are shown below.

Unit	CY2021 Natural Gas Usage
Source Numbers	All Natural Gas Units
Heat Input Rate (MMBtu/yr)	147156
Fuel Input Rate (MMscf/yr)	144.271

		Pollutant	Emission Factor	Emission Factor Units	(lb/yr)	(tons/yr)	Emission Factor Reference
		NO_x	100		14427.06	7.21	
		CO	84		12118.73	6.06	
		VOC	5.5		793.49	0.40	
		PM/PM_{10}	7.6		1096.46	0.55	
		SO_2	0.6		86.56	0.04	
		HAPS/POM					
HAP	POM	2-Methylenaphthale	2.40E-05		3.46E-03	1.73E-06	
HAP	POM	3-Methylchloranthre	1.80E-05		2.60E-03	1.30E-06	
HAP	POM	7,12 dimethylbenz(a	1.60E-05		2.31E-03	1.15E-06	
HAP	POM	Acenaphthene	1.80E-06		2.60E-04	1.30E-07	
HAP	POM	Acenaphthylene	1.80E-06		2.60E-04	1.30E-07	
HAP	POM	Anthracene	2.40E-06		3.46E-04	1.73E-07	
HAP	POM	Benz(a)anthracene	1.80E-06		2.60E-04	1.30E-07	
HAP		Benzene	2.10E-03		3.03E-01	1.51E-04	
HAP	POM	benzo(a)pyrene	1.20E-06		1.73E-04	8.66E-08	
HAP	POM	benzo(b)fluoranther	1.80E-05		2.60E-03	1.30E-06	
HAP	POM	Benzo(g,h,i)perylene	1.20E-06		1.73E-04	8.66E-08	
HAP	POM	Benzo(k)fluoranther	1.80E-06		2.60E-04	1.30E-07	
HAP	POM	Chrysene	1.80E-06		2.60E-04	1.30E-07	Emission factors from AP-42 Tables 1.4-1, 1.4-2, and 1.4-3 (7/1998).
HAP	POM	Dibenzo(a,h)antthra	1.20E-06	lb/MMscf	1.73E-04	8.66E-08	
HAP		Dichlorobenzene	1.20E-03		1.73E-01	8.66E-05	
HAP	POM	Fluoranthene	3.00E-06		4.33E-04	2.16E-07	
HAP	POM	Fluorene	2.80E-06		4.04E-04	2.02E-07	
HAP		Formaldehyde	7.50E-02		1.08E+01	5.41E-03	
HAP		Hexane	1.80E+00		2.60E+02	1.30E-01	
HAP	POM	Indoeno(1,2,3-cd)py	1.80E-06		2.60E-04	1.30E-07	
HAP		Naphthalene	6.10E-04		8.80E-02	4.40E-05	
HAP	POM	Phenanathrene	1.70E-05		2.45E-03	1.23E-06	
HAP	POM	Pyrene	5.00E-06		7.21E-04	3.61E-07	
HAP		Toluene	3.40E-03		4.91E-01	2.45E-04	
HAP		Arsenic	2.00E-04		2.89E-02	1.44E-05	
HAP		Beryllium	1.20E-05		1.73E-03	8.66E-07	
HAP		Cadmium	1.10E-03		1.59E-01	7.93E-05	
HAP		Chromium	1.40E-03		2.02E-01	1.01E-04	
HAP		Cobalt	8.40E-05		1.21E-02	6.06E-06	
HAP		Manganese	3.80E-04		5.48E-02	2.74E-05	
HAP		Mercury	2.60E-04		3.75E-02	1.88E-05	
HAP		Nickel	2.10E-03		3.03E-01	1.51E-04	
HAP		Selenium	2.40E-05		3.46E-03	1.73E-06	
HAP		Lead	5.00E-04		7.21E-02	3.61E-05	
				Total HAP =	**2.72E+02**	1.36E-01	
				Total POM =	**1.74E-02**	8.70E-06	

SN-05 Misc Process Heaters updated 10/27/17

	Equipment	MMBtu/hr
Existing	South Webco	0.004
Existing	North Webco	0.004
Existing	East Webco	0.004
Existing	West Webco	0.004
Existing	Aaon Unit-over mezzanine	0.120
Existing	Sec. Proc. Aaon 10 ton #1	0.120
Existing	Sec. Proc. Aaon 10 ton #2	0.120
Existing	Sec. Proc. Aaon 10 ton #3	0.120
Existing	Sec. Proc. Aaon 4 ton #1	0.048
Existing	2014 MAU #1	2.700
Existing	2014 MAU #2	2.700
New	2017 MAU Live Hang #1	1.643
New	2017 MAU Live Hang #2	2.712
New	2017 MAU Live Hang #3	3.944
New	2017 MAU Live Hang #4	3.944
New	2017 New Water Heater Picking/Mainteance	3.50
	Total of Existing and New MMBtu/hr	21.69
	Permit MMBtu/hr	30.00

Process Emissions for Fryers updated 9/22/22
CY2021 Throughput

Fryers	Pollutant	Emission Rate (tpy)	Annual	Units	Emission Control %	Emission Factor Value	Emission Factor Units	Emission Factor Source
Fryer Production for Lines 2 and 3	PM/PM10	0.58	211,152,713	lbs	90%	0.11	lbs/ton	Stack Test from a Similar Facility (updated based on the latest data used for Tyson's new Danville, VA Facility).
	VOC	12.67		lbs	0%	0.240	lbs/ton	Methods for Developing a National Emission Inventory for Commercial Cooking Processes: Technical Memorandum, "Summary of Commercial Cooking Test Results" for a "Deep Fat Fryer"
Fryer Production Line 4	PM/PM10	2.90	105,576,357	lbs	0%	0.11	lbs/ton	Stack Test from a Similar Facility (updated based on the latest data used for Tyson's new Danville, VA Facility).
	VOC	6.33		lbs	0%	0.24	lbs/ton	Methods for Developing a National Emission Inventory for Commercial Cooking Processes: Technical Memorandum, "Summary of Commercial Cooking Test Results" for a "Deep Fat Fryer"
	Total PM/PM10	3.48	316,729,070					
	Total VOC	19.00						

Fryers	Pollutant	Emission Rate (tpy)	Annual CY2022 YTD as of 12/13/22	Units	Emission Control %	Emission Factor Value	Emission Factor Units	Emission Factor Source
Fryer Production for Lines 2 and 3	PM/PM10	0.53	193,702,351	lbs	90%	0.11	lbs/ton	Stack Test from a Similar Facility (updated based on the latest data used for Tyson's new Danville, VA Facility).
	VOC	11.62		lbs	0%	0.240	lbs/ton	Methods for Developing a National Emission Inventory for Commercial Cooking Processes: Technical Memorandum, "Summary of Commercial Cooking Test Results" for a "Deep Fat Fryer"
Fryer Production Line 4	PM/PM10	2.66	96,851,175	lbs	0%	0.11	lbs/ton	Stack Test from a Similar Facility (updated based on the latest data used for Tyson's new Danville, VA Facility).
	VOC	5.81		lbs	0%	0.24	lbs/ton	Methods for Developing a National Emission Inventory for Commercial Cooking Processes: Technical Memorandum, "Summary of Commercial Cooking Test Results" for a "Deep Fat Fryer"
	Total PM/PM10	3.20						
	Total VOC	17.43						

Total CY2022	290553526	96851175.33	193702350.7

Live Hang Operations updated 9/22/22 Actual throughput SN-08/ SN-09

INTERNAL NOTES

The facility operates two live hang lines where the chicken are hung in preprations for slaughter. Emissions from dust and manuare may be vented to atmosphere through four live hang room air vents. AP-42 does not contain emission factors to account for these type of emissions. A study was performed on a Tyson Broken Bow Ok facility to detemine the approximate level of emissions that may be emitted from the live hang operations.

Emission Calculations:
Process Rates:
Processing Rate for CY2021: 47,036,144 birds/yr
Maximum Bird Weight: 7.3 lbs/bird

Emission Rates:
Emission Factor: 0.1 lbs PM/ ton bird
Assume PM10 = PM
Baghouse control efficiency = 99.9%

47,036,144 birds/yr x 0.1 lbs PM/bird x (1-0.999) x (1 ton/2000 lbs) = 0.04 tons/hr PM/PM10 total

Live Hang							
Maximum Process Rate birds/min/	lbs/bird		*PM*	*PM10*		*units*	
47,036,144	7.30		*0.1*	*0.1*		*lbs/ton processed*	*Broken Bow, OK emisssion factors*
	tons/yr	Control Efficiency for Room Control					
Live Hang vents to room air	171.682	99.9%	0.04	0.04		tpy	
		Total	0.04	0.04		tpy	

Table 2-1. Constants for VOC Emission Calculations

Water Molecular Weight (M) of Mixture	52.4 lb/lb-mol	
Water Mass Transfer Coefficient (K)	0.83 cm/s	
Water Mass Transfer Coefficient (K)	98.031 ft/hr	
Ideal Gas Constant	998.9 ft^3 mmHg/lb-mol K	
Density Water	8.34 lb/gal	
Conversion Factor	3.7854 dm^3/gallon	
Sulfuric Acid (max per SDS)	43%	43% Maximum % sulfuric
CY2021 (gallons)	5,940	

Table 2-2. Constants for VOC Emission Calculations for Sulfuric Acid

Chemical	Henry's Law Constants[1] kHθ (g-mol/dm^3 atm)	-ΔH/R (K)	Tθ (K)	Molecular Weight (M) (lb/lb-mol)	Mass Transfer Coefficient (K) (ft/hr)
Sulfuric Acid	980	4,900	298.15	98	79.57

1. Henry's Law Constants obtained from *Compilation of Henry's Law Constants for Inorganic and Organic Species of Potential Importance in Environmental Chemistry,* Version 3 by R. Sander April 8, 1999.

Table 2-3. Constants for VOC Emission Calculations for Evis Units

Equipment	Count	Temperature[1] (C)	Temperature (K)	Henry's Constant Acetic Acid kH (M/atm)	Concentration Assist[1] ppm	Concentration Sulfuric Acid M (lb-mol/dm^3)
West Rehang Dip	1	33.0	306.2	637.8	400	3.87E-06
East Rehang Dip	1	34.0	307.2	605.5	400	3.87E-06
North OLR Dip	1	30.0	303.2	747.3	400	3.87E-06
South OLR Dip	1	30.0	303.2	747.3	400	3.87E-06

1. Temperatures and concentrations based on operating data provided by Tyson

Table 2-4. Potential VOC Emissions from use of Assist

Equipment	Partial Pressure Sulfuric Acid mmHg	Evaporation Surface Area (ft^2)	Evaporation Rate[2] Sulfuric Acid (lb/hr)	Sulfuric Acid (tpy)
West Rehang Dip	2.09E-03	17.33	9.23E-04	4.04E-03
East Rehang Dip	2.20E-03	17.33	9.70E-04	4.25E-03
North OLR Dip	1.78E-03	17.33	7.96E-04	3.49E-03
South OLR Dip	1.78E-03	17	7.96E-04	3.49E-03
			0.0035	1.53E-02

2. Evaporation rate estimated based on EPA's EIIP Volume II: Chapter 16, *Methods for Estimating Air Emissions from Chemical Manufacturing Facilities*, August 2007. Equation 3-24,& 3-27

TLV of Sulfuric Acid mg/m3	0.2
PAER (lbs/hr) (0.11 x TLV)	0.022
Is Sulfuric Acid emissions in lbs/hr less than the PAER.	YES

Cooling Towers

internal notes

Updated 9/21/22

Emissions from cooling towers are estimated using the methodology of AP-42 Section 13.4. Emissions estimates are summarized in the table below.

				PM/PM10 Emissions	
Description	**Maximum TDS (ppm)**	**Drift Rate (%)**	**Flow Rate (gpm)**	**(lb/hr)**	**(tpy)**
Cooling Tower 1	4,300	0.0010	1,200	0.026	0.113
Cooling Tower 2	4,300	0.0050	1,200	0.129	0.565
Cooling Tower 3	4,300	0.0050	1,200	0.129	0.565
Cooling Tower 4	4,300	0.0050	1,200	0.129	0.565
Cooling Tower 5	4,300	0.0050	2,400	0.258	1.131
Cooling Tower 6	4,300	0.0050	2,400	0.258	1.131
Cooling Tower 7	4,300	0.0050	1,030	0.111	0.485
Cooling Tower 8	4,300	0.0050	1,000	0.108	0.471
Cooling Tower 9	4,300	0.0050	1,000	0.108	0.471
			Total	1.256	5.499

No equipment spec available. Used a conservatively high drift rate of 0.005%.

It is assumed all PM = PM10
Example Calculations:

PM lb/hr= flow rate (gal/min) * 60 min/hr * drift rate%/100 * TDS ppm/1,000,000 * 8.34 lb water/gal water

= 1,200 gal/min * 60 min/hr * 0.005/100 * 4,000 parts/1,000,000 parts * 8.34 lb water/gal = 0.12 lb/hr

PM tpy = 0.12 lb/hr * 8,760 hr/yr * ton/2,000 lb = 0.526 tons/yr

Potential and Actual VOC/HAP Emissions Calculations: Cleaners, Sanitizers, and Other Chems Updated 8/30/22

Mfr	Product	CY2021 Usage[1] (gal/yr)	Density[2] (lb/gal)	VOC Content[2] (w/w)	VOC Emissions[3] (lb/yr)	VOC Emission[4] (tpy)	HAP Content[2] (w/w)	HAP Emission[3] (lb/yr)	HAP Emission[4] (tpy)
CLEANERS/Sanitizers/Intervention									
Chem Station	9635 Foam Acid Cleaner	**1,625.0**	9.22	1.00%	149.76	0.075	0.00%	0.0	0.00
Chem Station	20111 Hand Scrub	**9,930**	8.43	1.00%	837.27	0.42	0.00%	0.0	0.00
Chem Station	57201 NF All Metal Safe CIP	**2,420**	8.78	1.00%	212.52	0.11	0.00%	0.0	0.00
Chem Station	8315 Rail and Chain Cleaner	**55**	8.42	1.00%	0.17	0.00	0.00%	0.0	0.00
Zep	Formula 50	**350**	8.83	5.00%	0.17	0.00	0.00%	0.0	0.00
Best Sanitizers	Alpet D2	**400**	7.42	75.00%	2226.8	1.11	0.00%	0.0	0.00
Total									
Total Cleaners/Sanitizers/Intervention Actual Emissions, tpy				**VOC**		**1.71**	**HAP**		**0.00**
Total Cleaners/Sanitizers/Intervention Potential Emissions[5], tpy				**VOC**		**2.57**	**HAP**		**0.00**

[1]Data from plant purchasing records

[2]Per manufacturer's MSDS or Method 24 test results (where available).

[3]Emissions (lb/year) = (Actual Usage, gal/year)*(Density, lb/gal)*(VOC/HAP Content, %)

[4]Emissions (tpy) = (Emissions, lb/yr) / (2,000 lb/ton)

[5]Potential Emissions, tpy = (Actual Emissions, tpy) * 1.5

Hope Acetic Acid and PAA Potential Emission Esitmates updated 8/30/22

CY2021 Usage (gallons) 113,400

Constants for VOC Emission Calculations

Water Molecular Weight (M)	18.02 lb/lb-mol
Water Mass Transfer Coefficient (K)	0.83 cm/s
Water Mass Transfer Coefficient (K)	98.031 ft/hr
Ideal Gas Constant	998.9 ft^3 mmHg/lb-mol K
Density Water	8.34 lb/gal
Conversion Factor	3.7854 dm^3/gallon
Acetic Acid Concentration	45-55
Peroxyacetic Acid Concentration	15-30%

Constants for VOC Emission Calculations for Acetic Acid and Peroxyacetic Acid

Chemical	Henry's Law Constants[1] kHθ (g-mol/dm^3 atm)	-ΔH/R (K)	Tθ (K)	Molecular Weight (M) (lb/lb-mol)	Mass Transfer Coefficient (K) (ft/hr)
Acetic Acid	980	4,900	298.15	60.05	65.63
Peroxyacetic Acid	840	5,300	298.15	76.05	60.66

1. Henry's Law Constants obtained from *Compilation of Henry's Law Constants for Inorganic and Organic Species of Potential Importance in Environmental Chemistry*, Version 3 by R. Sander April 8, 1999.

Constants for VOC Emission Calculations for the PAA Dip Tanks

Equipment	Temperature[1] (C)	Temperature (K)	Henry's Constant Acetic Acid kH (M/atm)	Henry's Constant Peroxyacetic Acid kH (M/atm)	Concentration PAA[1] ppm	Concentration Acetic Acid M (lb-mol/dm^3)	Concentration Peroxyacetic Acid M (lb-mol/dm^3)
West Rehang Dip	50	323	275	212	600	1.32E-05	5.21E-06
East Rehang Dip	50	323	275	212	600	1.32E-05	5.21E-06
North OLR Dip	50	323	275	212	600	1.32E-05	5.21E-06
South OLR Dip	50	323	275	212	600	1.32E-05	5.21E-06
Reprocessing Dip	43	316	384	305	600	1.32E-05	5.21E-06
North Prechiller	48	321	302	235	100	2.20E-06	8.69E-07
South Prechiller	48	321	302	235	100	2.20E-06	8.69E-07
North Chiller	4	277	3,404	3,230	100	2.20E-06	8.69E-07
South Chiller	4	277	3,404	3,230	100	2.20E-06	8.69E-07
North Finishing Chiller	10	283	2,341	2,154	800	1.76E-05	6.95E-06
South Finishing Chiller	10	283	2,341	2,154	800	1.76E-05	6.95E-06
Wing Dip	34	307	605	499	1000	2.20E-05	8.69E-06
West Tender Dip	39	312	469	378	1000	2.20E-05	8.69E-06
East Tender Dip	39	312	469	378	1000	2.20E-05	8.69E-06
Breast Dip	42	315	404	322	1000	2.20E-05	8.69E-06
Dark Meat Dip	38	311	493	400	1000	2.20E-05	8.69E-06

1. Temperatures and concentrations based on operating data provided by Hope Processing. Temperatures and concentrations are assumed to be at the highest of the ranges allowed.

Table A-7. Potential VOC Emissions for PAA Dip Tanks

Equipment	Partial Pressure Acetic Acid mmHg	Partial Pressure Peroxyacetic Acid mmHg	Evaporation Surface Area (ft^2)	Evaporation Rate[1] Acetic Acid (lb/hr)	Evaporation Rate[1] Peroxyacetic Acid (lb/hr)	Evaporation Rate[1] Acetic Acid (tpy)	Evaporation Rate[1] Peroxyacetic Acid (tpy)
West Rehang Dip	1.66E-02	8.47E-03	17.33	3.51E-03	2.10E-03	0.0154	0.0092
East Rehang Dip	1.66E-02	8.47E-03	17.33	3.51E-03	2.10E-03	0.0154	0.0092
North OLR Dip	1.66E-02	8.47E-03	17.33	3.51E-03	2.10E-03	0.0154	0.0092
South OLR Dip	1.66E-02	8.47E-03	17	3.51E-03	2.10E-03	0.0154	0.0092
Reprocessing Dip	1.18E-02	5.89E-03	7	9.84E-04	5.73E-04	0.0043	0.0025
North Prechiller	2.51E-03	1.27E-03	200	6.17E-03	3.66E-03	0.0270	0.0160
South Prechiller	2.51E-03	1.27E-03	200	6.17E-03	3.66E-03	0.0270	0.0160
North Chiller	2.23E-04	9.27E-05	750	2.38E-03	1.16E-03	0.0104	0.0051
South Chiller	2.23E-04	9.27E-05	750	2.38E-03	1.16E-03	0.0104	0.0051
North Finishing Chiller	2.59E-03	1.11E-03	32	1.16E-03	5.81E-04	0.0051	0.0025
South Finishing Chiller	2.59E-03	1.11E-03	32	1.16E-03	5.81E-04	0.0051	0.0025
Wing Dip	1.25E-02	6.00E-03	8	1.21E-03	6.77E-04	0.0053	0.0030
West Tender Dip	1.62E-02	7.92E-03	6	1.23E-03	7.03E-04	0.0054	0.0031
East Tender Dip	1.62E-02	7.92E-03	6	1.23E-03	7.03E-04	0.0054	0.0031
Breast Dip	1.88E-02	9.31E-03	8	1.96E-03	1.14E-03	0.0086	0.0050
Dark Meat Dip	1.54E-02	7.50E-03	2	3.24E-04	1.85E-04	0.0014	0.0008
					Total Emissions	0.18	0.10

1. Evaporation rate estimated based on EPA's EIIP Volume II: Chapter 16, *Methods for Estimating Air Emissions from Chemical Manufacturing Facilities*, August 2007. Equation 3-24,& 3-27

Example Calculation of Acetic Acid in PAA Dip Tanks

Henry's Law Constant

$$\frac{980\ \text{g-mol}}{dm^3\ \text{atm}} \exp\left\{4{,}900\ \text{K}\left\{\frac{1}{323.15\ \text{K}} - \frac{1}{298.15\ \text{K}}\right\}\right\} =$$

Concentration of acetic acid

$$\frac{600\ \text{lb PAA}}{1{,}000{,}000\ \text{lb Water}} \times \frac{8.34\ \text{lb}}{\text{gallon}} \times \frac{\text{gallon}}{3.7854\ \text{dm3}} \times \frac{0.60\ \text{lb acetic acid}}{\text{lb PAA}} \times \frac{\text{lb-mol}}{60.05\ \text{lb}} = \frac{1.32\text{E-}5\ \text{lb-mol acetic acid}}{dm^3}$$

Partial pressure of acetic acid

$$\frac{1.32\text{E-}5\ \text{lb-mol}}{dm^3} \times \frac{dm^3\ \text{atm}}{0{,}275\ \text{g-mol}} \times \frac{453.59\ \text{g-mol}}{\text{lb-mol}} \times \frac{760\ \text{mmHg}}{\text{atm}} = 1.66\text{E-}2\ \text{mmHg acetic acid} \times \frac{0{,}275\ \text{g-mol}}{dm^3\ \text{atm}}$$

Mass transfer coefficient

$$\frac{98.03\ \text{ft (water)}}{\text{hr}} \left\{\frac{18.02\ \text{lb/lb-mol (water)}}{60.05\ \text{lb/lb-mol (acetic acid)}}\right\}^{(1/3)} = \frac{65.63\ \text{ft (acetic acid)}}{\text{hr}}$$

Evaporation rate of acetic acid

$$\frac{60.05\ \text{lb (acetic acid)}}{\text{lb-mol}} \times \frac{65.63\ \text{ft}}{\text{hr}} \times \frac{998.9\ \text{ft3 mmHg}}{\text{lb-mol K}} \times \frac{17.33\ \text{ft2}}{323.15\ \text{K}} \times \frac{1.66\text{E-}2\ \text{mmHg}}{} = \frac{3.51\text{E-}03\ \text{lb acetic acid}}{\text{hr}}$$

Diesel Storage Tanks Updated 9/20/22

Emissions estimates are contained in the TANKS ESP reports in the following pages.

Diesel Storage Tank #1 (20,000 gal) =
Diameter 10 ft.

V=(3.14 x r^2) x L
20,000 = (3.14 x 10^2)/4 x L
2673.61 ft3 = (3.14 x 10^2)/4 x L
2291.76/(3.14 x 100)/4 = L

L =	34.0587 ft
CY2021 Throughput (gal)	14,960
VOC Emissions (lbs/yr)	5.5293
VOC Emissions (tpy)	0.00276

PAA Day Tanks X 2

CY2021 Throughput (gal)	113,400
Volume	400
Diameter ft	4.3
Height ft	4
VOC Emissions (lbs/yr)	26.6989
VOC Emissions (tpy)	0.01335

Tank Summary for 2021 Annual

Site: Hope Processing Actuals,

Equations for this site: After 2019 AP-42 revisions H/D ratio: Default 0.5

Tank ID	Product	Throughput (gal)	Estimated standing losses (lbs)	Estimated working losses (lbs)	Total estimated emissions (lbs)
Diesel Tank (20,000 gal)	Diesel	14960.00016	5.1420368	0.38726602	5.5293029
PAA Day Tank 1	PAA	56700	2.5805565	10.768874	13.349431
PAA Day Tank 2	PAA	56700	2.5805565	10.768874	13.349431

12104/CHEMSAN 2150	12104	CHEMSAN QUATERNARY DISINFECTANT	QTY
		TYSON - HOPE	150
		TYSON - HOPE	150
		TYSON - HOPE	160
		TYSON - HOPE	200
		TYSON - HOPE	300
		TYSON - HOPE	170
		TYSON - HOPE	200
		TYSON - HOPE	250
		CHEMSAN 2150 TOTAL	**1,580**

			Piece of Equipment
10757/976500	10757	FOAMER, TIMED, DOORWAY	QTY
		TYSON - HOPE	2
		TYSON - HOPE	1
		976500 TOTAL	**3**

11358/9635;11358	FOAMING ACID CLEANER	QTY
	TYSON - HOPE	200
	TYSON - HOPE	125
	TYSON - HOPE	165
	TYSON - HOPE	150
	TYSON - HOPE	150
	TYSON - HOPE	150
	TYSON - HOPE	150
	TYSON - HOPE	175
	TYSON - HOPE	180
	TYSON - HOPE	180
	9635 TOTAL	**1,625**

11395/50196	11395	FOAMING ALKALINE CLEANER	QTY
		TYSON - HOPE	330
		TYSON - HOPE	450
		TYSON - HOPE	400
		TYSON - HOPE	400
		TYSON - HOPE	350
		TYSON - HOPE	330
		TYSON - HOPE	500
		TYSON - HOPE	-330
		TYSON - HOPE	330
		TYSON - HOPE	-223
		TYSON - HOPE	330
		TYSON - HOPE	450
		TYSON - HOPE	550
		TYSON - HOPE	400
		TYSON - HOPE	400
		TYSON - HOPE	400
		TYSON - HOPE	450
		TYSON - HOPE	400
		TYSON - HOPE	330
		TYSON - HOPE	300
		TYSON - HOPE	400

			TYSON - HOPE	400
			TYSON - HOPE	300
			TYSON - HOPE	225
			TYSON - HOPE	300
			TYSON - HOPE	300
			TYSON - HOPE	330
			TYSON - HOPE	390
			TYSON - HOPE	250
			TYSON - HOPE	250
			TYSON - HOPE	250
			TYSON - HOPE	200
			TYSON - HOPE	330
			TYSON - HOPE	300
			TYSON - HOPE	330
			TYSON - HOPE	330
			TYSON - HOPE	330
			TYSON - HOPE	330
			TYSON - HOPE	250
			TYSON - HOPE	330
			TYSON - HOPE	330
			TYSON - HOPE	420
			TYSON - HOPE	300
			TYSON - HOPE	225
			TYSON - HOPE	190
			TYSON - HOPE	200
			TYSON - HOPE	220
			TYSON - HOPE	250
			TYSON - HOPE	170
			TYSON - HOPE	170
			TYSON - HOPE	70
			50196 TOTAL	**15,217**
11973/50418	**11973**	**FREEZER CLEANER**		**QTY**
			TYSON - HOPE	150
			TYSON - HOPE	190
			TYSON - HOPE	150
			TYSON - HOPE	175
			TYSON - HOPE	270
			TYSON - HOPE	200
			TYSON - HOPE	330
			50418 TOTAL	**1,465**
11044/20111	**11044**	**HAND SCRUB SOAP**		**QTY**
			TYSON - HOPE	275
			TYSON - HOPE	400
			TYSON - HOPE	430
			TYSON - HOPE	300
			TYSON - HOPE	-300
			TYSON - HOPE	600
			TYSON - HOPE	-370
			TYSON - HOPE	330
			TYSON - HOPE	300
			TYSON - HOPE	330

		TYSON - HOPE	250
		TYSON - HOPE	250
		TYSON - HOPE	160
		TYSON - HOPE	250
		TYSON - HOPE	275
		TYSON - HOPE	330
		TYSON - HOPE	275
		TYSON - HOPE	400
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	550
		TYSON - HOPE	330
		TYSON - HOPE	240
		TYSON - HOPE	300
		TYSON - HOPE	330
		TYSON - HOPE	225
		TYSON - HOPE	240
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	275
		TYSON - HOPE	245
		TYSON - HOPE	250
		TYSON - HOPE	150
		20111 TOTAL	**9,930**

12298/50150	**12298**	**HEAVY DUTY ALKALINE DEGREASER**	**QTY**
		TYSON - HOPE	660
		TYSON - HOPE	55
		TYSON - HOPE	55
		50150 TOTAL	**770**

11108/50024	**11108**	**HEAVY DUTY FOAMING ALKALINE CLEANER**	**QTY**
		TYSON - HOPE	250
		TYSON - HOPE	250
		TYSON - HOPE	300
		TYSON - HOPE	450
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	325
		TYSON - HOPE	-330
		TYSON - HOPE	330
		TYSON - HOPE	250
		TYSON - HOPE	250
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	330
		TYSON - HOPE	250
		TYSON - HOPE	225
		TYSON - HOPE	160

TYSON - HOPE	330
TYSON - HOPE	280
TYSON - HOPE	300
TYSON - HOPE	330
TYSON - HOPE	330
TYSON - HOPE	300
TYSON - HOPE	330
TYSON - HOPE	330
TYSON - HOPE	400
TYSON - HOPE	400
TYSON - HOPE	400
TYSON - HOPE	200
TYSON - HOPE	275
TYSON - HOPE	200
TYSON - HOPE	450
TYSON - HOPE	300
TYSON - HOPE	660
TYSON - HOPE	500
TYSON - HOPE	500
TYSON - HOPE	330
TYSON - HOPE	500
TYSON - HOPE	330
TYSON - HOPE	460
TYSON - HOPE	450
TYSON - HOPE	400
TYSON - HOPE	330
TYSON - HOPE	330
TYSON - HOPE	330
TYSON - HOPE	330
TYSON - HOPE	330
TYSON - HOPE	550
TYSON - HOPE	330
TYSON - HOPE	330
TYSON - HOPE	300
50024 TOTAL	**17,135**

Piece of Equipment

10689/918115-NH	**10689 HPSS FOAMER (NO HOSE)**	**QTY**
	TYSON - HOPE	3
	TYSON - HOPE	7
	98115-NH TOTAL	**10**

11599/ENTECH FOG10-4/11599	**INSECTICIDE, FOGGING, 1% PYRETHERIN**	**QTY**
	TYSON - HOPE	1
	TYSON - HOPE	1
	TYSON - HOPE	1
	ENTECH FOG10-4 TOTAL	**3**

12313/57201	**12313 NF ALL METAL SAFE CIP**	**QTY**
	TYSON - HOPE	175
	TYSON - HOPE	190
	TYSON - HOPE	-190
	TYSON - HOPE	330

			TYSON - HOPE	165
			TYSON - HOPE	200
			TYSON - HOPE	175
			TYSON - HOPE	175
			TYSON - HOPE	200
			TYSON - HOPE	285
			TYSON - HOPE	275
			TYSON - HOPE	220
			TYSON - HOPE	220
			57201 TOTAL	**2,420**
12276/3998	**12276**	**NON FOAMING CAUSTIC**		**QTY**
			TYSON - HOPE	110
			TYSON - HOPE	165
			TYSON - HOPE	550
			3998 TOTAL	**825**
10547/3101	**10547**	**NON-FOAMING CHLORINATED CLEANER**		**QTY**
			TYSON - HOPE	120
			TYSON - HOPE	130
			TYSON - HOPE	120
			TYSON - HOPE	100
			TYSON - HOPE	100
			TYSON - HOPE	175
			TYSON - HOPE	220
			TYSON - HOPE	150
			TYSON - HOPE	100
			TYSON - HOPE	295
			TYSON - HOPE	120
			TYSON - HOPE	125
			TYSON - HOPE	225
			TYSON - HOPE	230
			TYSON - HOPE	300
			TYSON - HOPE	300
			TYSON - HOPE	190
			TYSON - HOPE	200
			TYSON - HOPE	200
			TYSON - HOPE	250
			TYSON - HOPE	220
			TYSON - HOPE	220
			TYSON - HOPE	330
			TYSON - HOPE	140
			TYSON - HOPE	275
			TYSON - HOPE	300
			TYSON - HOPE	250
			TYSON - HOPE	150
			TYSON - HOPE	220
			TYSON - HOPE	130
			TYSON - HOPE	150
			TYSON - HOPE	150
			TYSON - HOPE	175
			TYSON - HOPE	130
			TYSON - HOPE	120

		TYSON - HOPE	120
		TYSON - HOPE	130
		TYSON - HOPE	100
		TYSON - HOPE	180
		3101 TOTAL	**7,140**
11042/8315	**11042**	**RAIL AND CHAIN CLEANER**	**QTY**
		TYSON - HOPE	55
		8315 TOTAL	**55**
		Not Sold to Tyson any longer	
11335/55SGPLUS	**11335**	**SHACKLE GLIDE PLUS CHAIN LUBE-55 DRU**	**QTY**
		TYSON - HOPE	55
		55SGPLUS TOTAL	**55**
10027/3020	**10027**	**SODIUM HYDROXIDE 50%**	**QTY**
		TYSON - HOPE	55
		3020 TOTAL	**55**

							VOC		HA
UNIT $	EXTENDED $	DATE	INV#	VOC%	HAP %	Density	lbs/yr	tpy	lbs/hr
$6.14	$921.00	1/8/2021	13471100	0%	0		0	0	0
$6.14	$921.00	3/12/2021	13650100						
$6.14	$982.40	4/23/2021	13770600						
$6.14	$1,228.00	6/4/2021	13894800						
$6.14	$1,842.00	8/6/2021	14098900						
$6.14	$1,043.80	9/10/2021	14187300						
$6.14	$1,228.00	11/5/2021	14366800						
$6.14	$1,535.00	12/21/2021	14499700						
	$9,701.20								

							VOC		HA
UNIT $	EXTENDED $	DATE	INV#	VOC%	HAP %	Density	lbs/yr	tpy	lbs/hr
$1,100.00	$2,200.00	3/17/2021	13647100	NA	NA		0	0	0
$1,100.00	$1,100.00	3/17/2021	13647000						
	$3,300.00								

							VOC		HA
UNIT $	EXTENDED $	DATE	INV#	VOC%	HAP %	Density	lbs/yr	tpy	lbs/hr
$6.50	$1,300.00	8/30/2021	14140400	1%	0	9.2157	149.7551	0.074878	0
$6.50	$812.50	9/10/2021	14187300						
$6.50	$1,072.50	9/24/2021	14226100						
$6.50	$975.00	10/8/2021	14273600						
$6.50	$975.00	10/22/2021	14319200						
$6.50	$975.00	11/5/2021	14366800						
$6.50	$975.00	11/19/2021	14405500						
$6.50	$1,137.50	12/3/2021	14443100						
$6.50	$1,170.00	12/17/2021	14492200						
$6.50	$1,170.00	12/30/2021	14524400						
	$10,562.50								

							VOC		HA
UNIT $	EXTENDED $	DATE	INV#	VOC%	HAP %	Density	lbs/yr	tpy	lbs/hr
$4.71	$1,554.30	1/4/2021	13454600						
$4.71	$2,119.50	1/8/2021	13471100	0%	0		0	0	0
$4.71	$1,884.00	1/15/2021	13488900						
$4.71	$1,884.00	1/22/2021	13511300						
$4.71	$1,648.50	1/29/2021	13534300						
$4.71	$1,554.30	2/5/2021	13554500						
$4.71	$2,355.00	2/12/2021	13577900						
$4.71	-$1,554.30	2/16/2021	13585500						
$4.71	$1,554.30	2/16/2021	13585600						
$4.71	-$1,050.33	2/16/2021	13608400						
$4.71	$1,554.30	2/26/2021	13604700						
$4.71	$2,119.50	3/5/2021	13627100						
$4.71	$2,590.50	3/12/2021	13650100						
$4.71	$1,884.00	3/19/2021	13670000						
$4.71	$1,884.00	3/26/2021	13686500						
$4.71	$1,884.00	4/2/2021	13713000						
$4.71	$2,119.50	4/9/2021	13733400						
$4.71	$1,884.00	4/16/2021	13753100						
$4.71	$1,554.30	4/23/2021	13770600						
$4.71	$1,413.00	4/30/2021	13793200						
$4.71	$1,884.00	5/7/2021	13816700						

$4.71	$1,884.00	5/14/2021	13836000
$4.71	$1,413.00	5/21/2021	13855200
$4.71	$1,059.75	5/27/2021	13872400
$4.71	$1,413.00	6/4/2021	13894800
$4.71	$1,413.00	6/11/2021	13913100
$4.71	$1,554.30	6/18/2021	13939100
$4.71	$1,836.90	6/25/2021	13956500
$4.71	$1,177.50	7/2/2021	13991800
$4.71	$1,177.50	7/9/2021	13993700
$4.71	$1,177.50	7/16/2021	14036200
$4.71	$942.00	7/28/2021	14050200
$4.71	$1,554.30	8/12/2021	14098100
$4.71	$1,413.00	8/6/2021	14098900
$4.71	$1,554.30	8/18/2021	14119000
$4.71	$1,554.30	8/30/2021	14140400
$4.71	$1,554.30	9/3/2021	14176400
$4.71	$1,554.30	9/10/2021	14187300
$4.71	$1,177.50	9/17/2021	14203600
$4.71	$1,554.30	10/8/2021	14273600
$4.71	$1,554.30	10/1/2021	14259700
$4.71	$1,978.20	10/15/2021	14298900
$4.71	$1,413.00	10/22/2021	14319200
$4.71	$1,059.75	10/29/2021	14340800
$4.71	$894.90	11/5/2021	14366800
$4.71	$942.00	11/12/2021	14383200
$4.71	$1,036.20	11/19/2021	14405500
$4.71	$1,177.50	12/3/2021	14443100
$4.71	$800.70	12/10/2021	14470900
$4.71	$800.70	12/17/2021	14492200
$4.71	$329.70	12/21/2021	14499700
	$71,672.07		

							VOC		HA
UNIT $	**EXTENDED $**	**DATE**	**INV#**	**VOC%**	**HAP %**	**Density**	**lbs/yr**	**tpy**	**lbs/hr**
$6.22	$933.00	2/5/2021	13554400	0%	0		0	0	0
$6.22	$1,181.80	4/2/2021	13712900						
$6.22	$933.00	5/14/2021	13836100						
$6.22	$1,088.50	6/25/2021	13957400						
$6.22	$1,679.40	8/30/2021	14140500						
$6.22	$1,244.00	10/15/2021	14298900						
$6.22	$2,052.60	12/17/2021	14492300						
	$9,112.30								

							VOC		HA
UNIT $	**EXTENDED $**	**DATE**	**INV#**	**VOC%**	**HAP %**	**Density**	**lbs/yr**	**tpy**	**lbs/hr**
$3.70	$1,017.50	1/4/2021	13454600	1%	0	8.43174	837.2718	0.418636	0
$3.70	$1,480.00	1/15/2021	13488800						
$3.70	$1,591.00	1/29/2021	13534300						
$3.70	$1,110.00	2/5/2021	13554500						
$3.70	-$1,110.00	2/16/2021	13585500						
$3.70	$2,220.00	2/16/2021	13585600						
$3.70	-$1,369.00	2/16/2021	13608400						
$3.70	$1,221.00	2/26/2021	13604700						
$3.70	$1,110.00	3/5/2021	13627100						
$3.70	$1,221.00	3/19/2021	13670000						

$3.70	$925.00	3/26/2021	13686500
$3.70	$925.00	4/9/2021	13733400
$3.70	$592.00	4/23/2021	13770600
$3.70	$925.00	4/30/2021	13793200
$3.70	$1,017.50	5/7/2021	13816700
$3.70	$1,221.00	5/21/2021	13855200
$3.70	$1,017.50	5/27/2021	13872400
$3.70	$1,480.00	6/18/2021	13939100
$3.70	$1,221.00	7/2/2021	13991800
$3.70	$1,221.00	7/9/2021	13993700
$3.70	$1,221.00	7/16/2021	14036200
$3.70	$1,221.00	8/12/2021	14098100
$3.70	$1,221.00	8/18/2021	14119000
$3.70	$2,035.00	8/30/2021	14140400
$3.70	$1,221.00	9/10/2021	14187300
$3.70	$888.00	9/17/2021	14203600
$3.70	$1,110.00	10/8/2021	14273600
$3.70	$1,221.00	10/1/2021	14259700
$3.70	$832.50	10/22/2021	14319200
$3.70	$888.00	11/5/2021	14366800
$3.70	$1,221.00	11/19/2021	14405500
$3.70	$1,221.00	11/24/2021	14420800
$3.70	$1,017.50	12/3/2021	14443100
$3.70	$906.50	12/10/2021	14470900
$3.70	$925.00	12/17/2021	14492200
$3.70	$555.00	12/21/2021	14499700
	$36,741.00		

								VOC		HA
UNIT $	**EXTENDED $**	**DATE**	**INV#**	**VOC%**	**HAP %**	**Density**	**lbs/yr**	**tpy**	**lbs/hr**	
$5.98	$3,946.80	9/24/2021	14226000	0%	0		0	0	0	
$5.98	$328.90	11/19/2021	14405500							
$5.98	$328.90	12/21/2021	14499700							
	$4,604.60									

								VOC		HA
UNIT $	**EXTENDED $**	**DATE**	**INV#**	**VOC%**	**HAP %**	**Density**	**lbs/yr**	**tpy**	**lbs/hr**	
$6.18	$1,545.00	1/4/2021	13454600	0%	0		0	0	0	
$6.18	$1,545.00	1/8/2021	13471100							
$6.18	$1,854.00	1/15/2021	13488900							
$6.18	$2,781.00	1/22/2021	13511300							
$6.18	$2,039.40	1/29/2021	13534300							
$6.18	$2,039.40	2/5/2021	13554500							
$6.18	$2,008.50	2/12/2021	13577900							
$6.18	-$2,039.40	2/16/2021	13585500							
$6.18	$2,039.40	2/16/2021	13608400							
$6.18	$1,545.00	2/26/2021	13604700							
$6.18	$1,545.00	3/5/2021	13627100							
$6.18	$2,039.40	3/12/2021	13650100							
$6.18	$2,039.40	3/19/2021	13670000							
$6.18	$2,039.40	3/26/2021	13686500							
$6.18	$2,039.40	4/2/2021	13713000							
$6.18	$1,545.00	4/9/2021	13733400							
$6.18	$1,390.50	4/16/2021	13753100							
$6.18	$988.80	4/23/2021	13770600							

$6.18	$2,039.40	4/30/2021	13793200
$6.18	$1,730.40	5/7/2021	13816700
$6.18	$1,854.00	5/14/2021	13836000
$6.18	$2,039.40	5/21/2021	13855200
$6.18	$2,039.40	5/27/2021	13872400
$6.18	$1,854.00	5/26/2021	13870600
$6.18	$2,039.40	6/4/2021	13894800
$6.18	$2,039.40	6/11/2021	13913100
$6.18	$2,472.00	6/18/2021	13939100
$6.18	$2,472.00	6/25/2021	13956500
$6.18	$2,472.00	7/2/2021	13991800
$6.18	$1,236.00	7/9/2021	13993700
$6.18	$1,699.50	7/16/2021	14036200
$6.18	$1,236.00	7/28/2021	14050200
$6.18	$2,781.00	8/12/2021	14098100
$6.18	$1,854.00	8/6/2021	14098900
$6.18	$4,078.80	8/18/2021	14119000
$6.18	$3,090.00	8/30/2021	14140400
$6.18	$3,090.00	9/3/2021	14176400
$6.18	$2,039.40	9/10/2021	14187300
$6.18	$3,090.00	10/8/2021	14273600
$6.18	$2,039.40	10/1/2021	14259700
$6.18	$2,842.80	10/15/2021	14298900
$6.18	$2,781.00	10/22/2021	14319200
$6.18	$2,472.00	10/29/2021	14340800
$6.18	$2,039.40	11/5/2021	14366800
$6.18	$2,039.40	11/12/2021	14383200
$6.18	$2,039.40	11/19/2021	14405500
$6.18	$2,039.40	11/24/2021	14420800
$6.18	$2,039.40	12/3/2021	14443100
$6.18	$3,399.00	12/10/2021	14470900
$6.18	$2,039.40	12/17/2021	14492200
$6.18	$2,039.40	12/21/2021	14499700
$6.18	$1,854.00	12/30/2021	14524400
	$105,894.30		

UNIT $	EXTENDED $	DATE	INV#
$400.00	$1,200.00	4/30/2021	13785000
$400.00	$2,800.00	12/3/2021	14437700
	$4,000.00		

UNIT $	EXTENDED $	DATE	INV#	VOC%
$303.32	$303.32	7/16/2021	14007100	
$303.32	$303.32	9/24/2021	14218300	
$303.32	$303.32	10/8/2021	14270100	
	$909.96			

UNIT $	EXTENDED $	DATE	INV#				VOC		HA
$4.97	$869.75	1/8/2021	13471100	VOC%	HAP %	Density	lbs/yr	tpy	lbs/hr
$4.97	$944.30	2/16/2021	13585600	1%	0	8.78202	212.5249	0.106262	0
$4.97	-$944.30	2/16/2021	13608400						
$4.97	$1,640.10	3/17/2021	13661600						

$4.97	$820.05	4/16/2021	13753100
$4.97	$994.00	5/21/2021	13855200
$4.97	$869.75	6/11/2021	13913100
$4.97	$869.75	7/9/2021	13993700
$4.97	$994.00	7/28/2021	14050200
$4.97	$1,416.45	9/3/2021	14176400
$4.97	$1,366.75	10/15/2021	14298900
$4.97	$1,093.40	11/19/2021	14405500
$4.97	$1,093.40	12/21/2021	14499700
	$12,027.40		

UNIT $	EXTENDED $	DATE	INV#	VOC%	HAP %	Density	VOC lbs/yr	VOC tpy	HA lbs/hr
$4.20	$462.00	1/22/2021	13511400	0%	0		0	0	0
$4.20	$693.00	1/25/2021	13517900						
$4.20	$2,310.00	1/29/2021	13534300						
	$3,465.00								

UNIT $	EXTENDED $	DATE	INV#	VOC%	HAP %	Density	VOC lbs/yr	VOC tpy	HA lbs/hr
$3.95	$474.00	1/4/2021	13454600	0%	0		0	0	0
$3.95	$513.50	1/8/2021	13471100						
$3.95	$474.00	1/15/2021	13488900						
$3.95	$395.00	1/22/2021	13511300						
$3.95	$395.00	1/29/2021	13534300						
$3.95	$691.25	2/12/2021	13577900						
$3.95	$869.00	3/5/2021	13627100						
$3.95	$592.50	3/19/2021	13670000						
$3.95	$395.00	4/2/2021	13713000						
$3.95	$1,165.25	4/9/2021	13733400						
$3.95	$474.00	4/16/2021	13753100						
$3.95	$493.75	4/23/2021	13770600						
$3.95	$888.75	5/7/2021	13816700						
$3.95	$908.50	5/21/2021	13855200						
$3.95	$1,185.00	5/27/2021	13872400						
$3.95	$1,185.00	6/4/2021	13894800						
$3.95	$750.50	6/11/2021	13913100						
$3.95	$790.00	6/18/2021	13939100						
$3.95	$790.00	6/25/2021	13956500						
$3.95	$987.50	7/2/2021	13991800						
$3.95	$869.00	7/9/2021	13993700						
$3.95	$869.00	7/16/2021	14036200						
$3.95	$1,303.50	7/28/2021	14050200						
$3.95	$553.00	8/12/2021	14098100						
$3.95	$1,086.25	8/6/2021	14098900						
$3.95	$1,185.00	8/30/2021	14140400						
$3.95	$987.50	9/3/2021	14176400						
$3.95	$592.50	9/10/2021	14187300						
$3.95	$869.00	9/24/2021	14226100						
$3.95	$513.50	10/8/2021	14273600						
$3.95	$592.50	10/1/2021	14259700						
$3.95	$592.50	10/15/2021	14298900						
$3.95	$691.25	10/29/2021	14340800						
$3.95	$513.50	11/5/2021	14366800						
$3.95	$474.00	11/12/2021	14383200						

$3.95	$474.00	11/19/2021	14405500
$3.95	$513.50	11/24/2021	14420800
$3.95	$395.00	12/3/2021	14443100
$3.95	$711.00	12/17/2021	14492200
	$28,203.00		

UNIT $	EXTENDED $	DATE	INV#					VOC		HA
$4.78	$262.90	4/9/2021	13733500	**VOC%**	**HAP %**	**Density**	**lbs/yr**	**tpy**	**lbs/hr**	
	$262.90			1%	0	8.41506	4.628283	0.002314		0

UNIT $	EXTENDED $	DATE	INV#
$14.45	$794.75	3/26/2021	13681300
	$794.75		

								VOC		HA
UNIT $	**EXTENDED $**	**DATE**	**INV#**	**VOC%**	**HAP %**	**Density**	**lbs/yr**	**tpy**	**lbs/hr**	
$4.00	$220.00	7/2/2021	13999800	0%	0		0	0		0
	$220.00									

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CY2021 Purchases

Cost Center	Cost Elem.	Year	Purch.Doc.	Name
				CHEM,ANTIMICROB
				CHEM,ANTIMICROB
				CHEM,CITRIC,HYDR
				CHEM,PH ADJUSTEF
				CHEM,SODIUM,HYD
				CHEM,SULFURIC AC

Grand Total

Material description
IAL,300GAL 0000249204-SAFE FOODS CO Total
IAL,AJUST 0000249204-SAFE FOODS COR Total
OCLORIC A 0000249204-SAFE FOODS CO Total
,CAUSTIC, 0000249204-SAFE FOODS CO Total
ROXIDE,50P 0000249204-SAFE FOODS CO Total
ID/SODIUM 0000249204-SAFE FOODS CO Total

Safe Foods Name	Quantity	%VOC Content	
Promoat (PAA)	113,400.000	See PAA Calcs	
Ajust	520.000		0
Citralow Plus	18,150.000		0
Ajust pH	27,820.000		0
Phocus	14,560.000		0
Assist	5,940.000		0

180401

%HAP Content

0
0
0
0
0

Mfr	Product		
CLEANERS			
CRC	Contact Cleaner	maintenance	Exempt
Zep	Big Orange Degreaser	maintenance	Exempt
Oil Eater	Oil Eater Degreaser	maintenance	Exempt
Oatey	Purple Primer Cleaner	maintenance	Exempt

Comfort Heaters

	Equipment	MMBtu/hr
Existing	Production Office Unit	0.183
Existing	Upstairs Offices Unit #1	0.135
Existing	Upstairs Offices Unit #2	0.135
Existing	Breakroom Unit-West	0.180
Existing	Breakroom Unit-East	0.180
Existing	Nurse's Station Unit	0.125
Existing	Personnel Offices Unit	0.125
Existing	Shipping Office Unit	0.090
Existing	Purchasing Office Unit	0.075
Existing	Maintenance Shop Heater	0.300
Existing	Fab. Shop Heater	0.200
Existing	Offal Office Unit #1	0.075
Existing	Offal Office Unit #2	0.075
Existing	USDA Office Unit	0.080
Existing	Conf. Room Unit	0.150
Existing	David Keith's Office Unit	0.090
Existing	Maintenance Unit	0.080
New	Live Hang Break Room 2017	0.070
New	Mechanical Room 2017	0.105
New	Parts Room 2017	0.105
	Total	2.56

SAFE FOODS™
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ASSIST™

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Product Name: **ASSIST™**

Product Type: Sulfuric Acid and Sodium Sulfate in Water

Relevant Identified Uses of the Substance or Mixture

Intended Use: Processing Aid

Details of the Supplier of the Safety Data Sheet:

Safe Foods Corporation
1501 E 8th Street
North Little Rock, AR 72114

Telephone: (501) 758-8500

Emergency Telephone Number: **(800) 424-9300 (CHEMTREC)**

2. HAZARDS IDENTIFICATION

Appearance: Liquid

Classification of the Substance or Mixture

GHS - Classification

Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Eye Irritation: Category 2A
Substances/mixtures corrosive to metal- Category 1

Label Elements

Signal Word: Warning

Hazard Statements:
H319 - Causes serious eye irritation
H315 - Causes skin irritation
H290 - May be corrosive to metals

Precautionary Statements:

P280 - Wear protective gloves/protective clothing/eye protection/face protection
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash hands thoroughly after handling
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTRE or doctor/physician
P302+ P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with all local and national regulations

Other Hazards

Short Term: May be harmful if swallowed. May be harmful to aquatic organisms. (based on components)

Long Term: Occupational exposure to strong-inorganic-acid mists containing sulfuric acid is carcinogenic to humans. See section 11 for further explanation.

Note: This document has been prepared in accordance with standards for workplace safety, which require the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Ingredient	CAS Number	EU EINECS/ELINCS List	EU Classification	GHS Classification	%
Sulfuric acid	7664-93-9	231-639-5	C; R35	Skin Corr. 1A (H314)	37.0- 43.0
Sodium sulfate anhydrous	7757-82-6	231-820-9	Not Listed	Not Listed	0.0 - 7.0

Ingredient	CAS Number	EU EINECS/ELINCS List	EU Classification	GHS Classification	%
Water	7732-18-5	231-791-2	Not Listed	Not Listed	47 - 51

Additional Information: Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

For the full text of the R phrases and CLP/GHS abbreviations mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of First Aid Measures

Eye Contact: Flush with water while holding eyelids open for at least 15 minutes. Seek medical attention immediately.

Skin Contact: Remove contaminated clothing. Flush area with large amounts of water. Use soap. Seek medical attention.

Ingestion: In the event of swallowing this material, seek immediate medical attention. DO NOT INDUCE VOMITING.

Inhalation: Remove to fresh air and keep patient at rest. Seek medical attention immediately.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms and Effects of Exposure: For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

Medical Conditions Aggravated by Exposure: Individuals with a history of hypersensitivity to this material or other materials in its chemical class, individuals with other allergic conditions or diseases (asthma, eczema, etc.).

Indication of the Immediate Medical Attention and Special Treatment Needed

Notes to Physician: None

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish fires with CO2, extinguishing powder, foam, or water.

Special Hazards Arising from the Substance or Mixture

Hazardous Combustion Products: Toxic or corrosive gases including oxides of carbon and oxides of sulfur

Fire / Explosion Hazards: Fine particles (such as dust and mists) may fuel fires/explosions.

Advice for Fire-Fighters

During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Avoid dust and mist generation. Avoid contact with skin, eyes and clothing . Ensure adequate ventilation. Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

Environmental Precautions

Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and Material for Containment and Cleaning Up

Measures for Cleaning / Collecting: Contain the source of spill if it is safe to do so. Collect spill with absorbent material. Clean spill area thoroughly.

Additional Consideration for Large Spills: Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

7. HANDLING AND STORAGE

Precautions for Safe Handling

7. HANDLING AND STORAGE

When handling, use appropriate personal protective equipment (see Section 8). Minimize generating airborne mists and vapors. Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Releases to the environment should be avoided.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions: Store tightly covered away from heat, acids, bases, and oxidizers. Protect from freezing.
Storage Temperature: < 50 °C/122 °F
Incompatible Materials: Metals , Strong alkalis , Reducing agents
Specific end use(s): No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Refer to available public information for specific member state Occupational Exposure Limits.

Sulfuric acid

ACGIH Threshold Limit Value (TWA)	0.2 mg/m^3
Australia STEL	3 mg/m^3
Australia TWA	1 mg/m^3
Austria OEL - MAKs	0.1 mg/m^3
Belgium OEL - TWA	1 mg/m^3
Bulgaria OEL - TWA	0.05 mg/m^3
Cyprus OEL - TWA	0.05 mg/m^3
Czech Republic OEL - TWA	1 mg/m^3 0.05 mg/m^3
Denmark OEL - TWA	0.05 mg/m^3
Estonia OEL - TWA	0.05 mg/m^3
Finland OEL - TWA	0.05 mg/m^3
France OEL - TWA	0.05 mg/m^3
Germany - TRGS 900 - TWAs	0.1 mg/m^3
Germany (DFG) - MAK	0.1 mg/m^3
Greece OEL - TWA	0.05 mg/m^3
Hungary OEL - TWA	0.05 mg/m^3
Ireland OEL - TWAs	1 mg/m^3
Japan - OELs - Ceilings	1 mg/m^3
Latvia OEL - TWA	0.05 mg/m^3
Lithuania OEL - TWA	0.05 mg/m^3
Luxembourg OEL - TWA	0.05 mg/m^3
Malta OEL - TWA	0.05 mg/m^3
Netherlands OEL - TWA	0.05 mg/m^3
Vietnam OEL - TWAs	1 mg/m^3
OSHA - Final PELS - TWAs:	1 mg/m^3
Poland OEL - TWA	1 mg/m^3 0.05 mg/m^3
Portugal OEL - TWA	0.2 mg/m^3
Romania OEL - TWA	0.05 mg/m^3
Slovakia OEL - TWA	0.1 mg/m^3
Slovenia OEL - TWA	0.05 mg/m^3
Spain OEL - TWA	0.05 mg/m^3
Sweden OEL - TWAs	0.1 mg/m^3
Switzerland OEL -TWAs	0.1 mg/m^3

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Sodium sulfate anhydrous

Latvia OEL - TWA	10 mg/m^3
Lithuania OEL - TWA	10 mg/m^3

Exposure Controls

Engineering Controls:	Engineering controls should be used as the primary means to control exposures. Keep airborne contamination levels below the exposure limits listed above in this section.
Personal Protective Equipment:	Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).
Hands:	Wear impervious gloves if skin contact is possible.
Eyes:	Wear safety goggles if eye contact is possible (face shield recommended if splashing is possible).
Skin:	Wear impervious protective clothing to prevent skin contact.
Respiratory protection:	Whenever excessive air contamination (dust, mist, vapor) is generated, respiratory protection, with appropriate protection factors, should be used to minimize exposure. If the applicable Occupational Exposure Limit (OEL) is exceeded, wear an appropriate respirator with a protection factor sufficient to control exposures to below the OEL.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	**Color:**	Clear, colorless to amber
Odor:	None	**Odor Threshold:**	No data available.
Molecular Formula:	Mixture	**Molecular Weight:**	Mixture

Solvent Solubility:	No data available
Water Solubility:	Soluble
pH:	<1
Melting/Freezing Point (°C):	-18
Boiling Point (°C):	121

Partition Coefficient: (Method, pH, Endpoint, Value)
No data available

Decomposition Temperature (°C):	No data available.
Evaporation Rate (Gram/s):	No data available
Vapor Pressure (kPa):	No data available
Vapor Density (g/ml):	No data available
Relative Density:	No data available
Specific Gravity:	1.35 - 1.40 @ 25C/77F
Viscosity:	No data available

Flammablity:

Autoignition Temperature (Solid) (°C):	No data available
Flammability (Solids):	No data available
Flash Point (Liquid) (°C):	No data available
Upper Explosive Limits (Liquid) (% by Vol.):	No data available
Lower Explosive Limits (Liquid) (% by Vol.):	No data available
Polymerization:	Will not occur

10. STABILITY AND REACTIVITY

Reactivity: No data available
Chemical Stability: Stable under normal conditions of use.
Possibility of Hazardous Reactions
Oxidizing Properties: Oxidizer
Conditions to Avoid: Keep away from excessive heat and flames. Avoid contact with Alkalies , Strong caustics
Incompatible Materials: Metals , Strong alkalis , Reducing agents
Hazardous Decomposition Products: Thermal decomposition can lead to release of irritating gases and vapours. Thermal decomposition products may include oxides of sulfur

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects
General Information: Toxicological properties of the formulation have not been fully investigated. The information in this section describes the potential hazards of the individual ingredients and the formulation. Routes of exposure: eye contact , skin contact , inhalation

Industrial hygiene monitoring for airborne concentrations of sulfuric acid has been conducted in an area where this product was in use. Results of this monitoring indicated airborne sulfuric acid levels were well below the OSHA PEL for this substance. These results are available upon request. Each individual situation, however, should be evaluated separately.

Acute Toxicity: (Species, Route, End Point, Dose)

Sulfuric acid
Rat Oral LD50 2140 mg/kg
Rat Inhalation LC50 (2 hr) 510mg/m^3

Sodium sulfate anhydrous
Mouse Oral LD50 5989 mg/kg
Rabbit IV LD50 1220mg/kg

Irritation / Sensitization: (Study Type, Species, Severity)

Sulfuric acid
Eye Irritation Severe
Skin Irritation Severe

Carcinogen Status: The International Agency for Research on Cancer (IARC) and the United States National Toxicology Program (NTP) have classified 'occupational exposure to strong inorganic acid mists containing sulfuric acid' as a known human carcinogen. This classification applies only to sulfuric acid when generated as a mist. This classification is debated within the scientific community and there is disagreement as to whether or not a cause and effect relationship between cancer and 'occupational exposure to strong inorganic acid mists containing sulfuric acid' exists.

Sulfuric acid
IARC: Group 1 (Carcinogenic to Humans)

Product Level Toxicity Data

11. TOXICOLOGICAL INFORMATION

Irritation / Sensitization

Study Type	Species	Result
Skin Irritation	Rabbit	Moderate

Irritation / Sensitization Comments: Contact with this product is expected to cause eye and skin irritation, but not skin corrosion, based on available data. Signs and symptoms of eye exposure may include burning, tearing, redness, blurred vision, and swelling of the eyelids. Signs and symptoms of skin exposure may include redness, cracking or flaking of the skin, color change, and swelling of the affected area.

12. ECOLOGICAL INFORMATION

Environmental Overview: Environmental properties of the formulation have not been investigated. The following information is available for the individual ingredients. Releases to the environment should be avoided.

Toxicity:

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Sulfuric acid

Brachydanio rerio (Zebra fish) LC50 96 Hours > 500 mg/L
Daphnia magna (Water Flea) EC50 24 Hours 29 mg/L

Persistence and Degradability: No data available

Bio-accumulative Potential: No data available

Mobility in Soil: No data available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Waste of this product may qualify as a RCRA Hazardous Waste. Status should be confirmed by testing for RCRA hazardous characteristics (i.e. corrosivity, toxicity, reactivity, or ignitability). Waste may be classified as hazardous due to the ph/corrosivity. Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

14. TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

This material is regulated for transportation as a hazardous material/dangerous good. For US DOT, refer to the applicable RQ below.

UN number: UN 3264
UN proper shipping name: Corrosive Liquid, Acidic, Inorganic, n.o.s. (Sulfuric acid)

Transport hazard class(es): 8
Packing group: II

For small quantities packed in combination packaging, exceptions may apply.

U.S. DOT Reportable Quantity (RQ), 49 CFR 172.101 Appendix A:

Sulfuric acid

CERCLA/SARA Hazardous Substances and their Reportable Quantities:	1000 lb 454 kg

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Canada - WHMIS: Classifications
WHMIS hazard class:
Class D, Division 2, Subdivision B
This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

Sulfuric acid

CERCLA/SARA 313 Emission reporting	1.0 %
CERCLA/SARA Hazardous Substances and their Reportable Quantities:	1000 lb 454 kg
CERCLA/SARA - Section 302 Extremely Hazardous TPQs	1000 lb
CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs	1000 lb
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
Standard for the Uniform Scheduling for Drugs and Poisons:	Schedule 6
EU EINECS/ELINCS List	231-639-5

Sodium sulfate anhydrous

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
EU EINECS/ELINCS List	231-820-9

Water

15. REGULATORY INFORMATION

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Inventory - United States TSCA - Sect. 8(b)	Present
Australia (AICS):	Present
REACH - Annex IV - Exemptions from the obligations of Register:	Present
EU EINECS/ELINCS List	231-791-2

16. OTHER INFORMATION

Text of R phrases and GHS Classification abbreviations mentioned in Section 3

Skin corrosion/irritation-Cat.1A; H314 - Causes severe skin burns and eye damage

C - Corrosive

R35 - Causes severe burns.

Data Sources: The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

Creation Date: **3/31/2017**

Safe Foods Corporation believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.

End of Safety Data Sheet