

RESPONSE TO COMMENTS
Ciba Specialty Chemicals
AFIN#: 18-00081, Permit #: 860-AR-3

On, April 25, 2008, the Director of the Arkansas Department of Environmental Quality gave notice of a draft permitting decision for the above referenced facility. During the comment period, one interested party submitted written comments, data, views, or arguments on the draft permitting decision. The Department's response to these issues is as follows:

Comment #1: P8- Description Tankfarm 400 SNP3-3- Suggest – "Tankfarm 400 is located in the P3 procession Area" Permit lists P1 as the location of the tank farm.

Response #1: The location of Tank Farm 400 has been changed to the P3 Processing Area as requested.

Comment #2: Specific Condition 1 and Process Description for SNP3-1 should state that some (12 Tanks from 600 Tankfarm) tanks are included

Response #2: The permit has been modified to note that there are 12 tanks from the 600 Tank Farm that are routed to and controlled by SN-P3-1.

Comment #3: Specific Condition 2, HAP Table –Please add Allyl chloride and Methyl Methacrylate to the P1, P2, and P3 Equipment Leaks source, SN-FS-2. My calculations show LDAR Emission of AC=0.01 lbs/hr & 0.03 TPY, MMA of 0.2 lbs/hr & 0.9 TPY. Methanol emission rates should be increased slightly to 0.43 lbs/hr & 1.9 TPY.

In Specific Condition 41, we need to modify the Methanol to at least 2.5 Tons. The extra Methanol came from P4 -4 Equipment leaks.

The facility has also requested a 10% safety factor added to the HAP equipment leaks emissions of FS-2 and P4-4.

Response #3: Additional HAP emissions have been added to equipment leaks for the P1, P2, and P3 Buildings with a 10% safety factor. HAP emissions from the FS-2 section are 0.48 lb/hr and 2.09 tpy Methanol, 0.22 lb/hr and 0.99 tpy Methyl Methacrylate, 0.02 lb/hr and 0.04 tpy Allyl Chloride, 0.08 lb/hr and 0.36 tpy Methyl Chloride, and 0.06 lb/hr and 0.24 tpy Epichlorohydrin.

Methanol, according to the application and subsequent updates, is emitted at a rate of 0.28 tpy from Equipment Leaks in the P4 section (all including a 10% safety factor), and 0.95 tpy from the P3 section. Total Methanol bubbled emissions from the P1 through P4 units are 2.23 tpy .

Comment #4: In Specific Condition 2, PM emissions appear to be missing from the Lab Generator, SN-MI-1.

Response #4: PM emissions for SN-MI-1 have been added to Specific Condition 2 as requested. There are no other non-criteria pollutants for this source.

Comment #5: P1 Building -- Suggest adding this paragraph

“New P1 Scrubbers equipment is scheduled to Startup in the 3rd quarter 2008. Until the New equipment is started up SC 6 and SC 7 shall apply. Once the New equipment is started up SC 6 and SC 7 will be void and SC 8 and SC 9 shall apply. As required by interim Condition 11 of Site minor permit modification dated December 27, 2007 the permittee will inform the Department within 10 days of new equipment start-up”

Response #5: At the time of this response, the facility has put the P1 scrubber equipment changes into place. Therefore, two sets of conditions that would apply both before and after these changes is now unnecessary.

Comment #6: In SC 10, there is a requirement to show compliance with the hourly acetone emissions. There is no Acetone emitted from the P1 unit.

Response #6: The requirement to calculate acetone emissions from the P1 unit has been removed because the P1 sources do not emit acetone.

Comment #7: Specific Condition 17 P3-6 Boiler 3 --Suggest we add this statement from Boiler 3 description on page 9 as this would help clarify requirements. – “The methanol may be either from the P3 or P4 plants.”

SC 25 Suggest we add the same statement we recommended in SC-17 -- as this would help clarify requirements. – “The methanol may be either from the P3 or P4 plants”.

Response#7: Specific Conditions 17 and 25 have been modified to state that the methanol byproduct may come from either the P3 or the P4 plants as requested.

Comment #8: The facility suggests that the wording in Specific Condition 23 be modified to clarify requirements---“The permittee shall operate at least one caustic scrubber, one acid scrubber, and one carbon absorber at SN-P4-1” The permittee shall maintain a caustic scrubber liquid flowrate of at least 40 gallons per minute.

Response #8: Calculations for SN-P4-1 emissions account for a minimum of at least one caustic, one acid, and one carbon absorber as control. This condition has been modified to state that at least one of each control device shall be operated, however, control parameters still apply to each control device in operation at any time.

Comment #9: Specific Condition 24B should reference SNP4-5.

Response #9: Specific Condition 24B has been changed to reference SN-P4-5, Boiler #4 as requested.

Comment #10: "Combusted" needs to be added to Specific Condition #26.

Response #10: Specific Condition 26 has been changed to add "combusted at" in reference to methanol byproduct limits at SN-P3-6. Other conditions of the permit, #18 and #19, which reference methanol byproduct or isopropanol byproduct, have been changed to use similar language.

Comment #11: Specific Condition 35 states that an annual evaluation of WWT emissions be conducted. What does an Annual evaluation mean does this mean run EPA Tanks with current Waste Water Concentrations?

Response #11: The intention of the condition was for the facility to re-evaluate Wastewater fugitive emissions not only due to increasingly controlled air emissions from reaction processes, but due to possible process changes that the facility may make without needing prior permitting approval.

The condition has been re-written as follows:

The permittee shall perform an annual evaluation of VOC, HAP, and acetone emissions from the wastewater treatment operations at SN-FS-3. The evaluation shall be based upon data from sampling of these pollutants in the wastewater, estimations from the TANKS program, WATER9 or similar wastewater treatment modeling software. The permittee, if necessary to correct permitted emissions, shall submit an application to modify their minor source permit within 30 days of the assessment. [§18.1004 of Regulation 18, §19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Comment #12: Suggest rewrite 37 - As it is currently written some one could assume the 3 generators would be limited to 100 hours combined. Ciba recommends the following rewrite –

'The permittee shall be limited to 2 hours per week and 100 hours per year of diesel generator testing and maintenance operating time, each for SN-MI-2, SN-MI-3, and SN-MI-4, except that a 4-hour testing and maintenance event may be conducted once per year. Records of generator use for testing/maintenance shall be maintained on site, updated on a per-event basis, and made available to Department personnel upon request. Operation time required for actual emergency use is not restricted by this permit. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]'

Response #12: The intention behind Specific Condition #37 was to limit each individual source to 100 hours per year and two hours per week of testing and maintenance operating time. The condition has been re-written to clarify the individual limits.

Comment #14: Specific conditions 18, 19, 26, and 27 of Ciba's draft permit 860-AR-3 contains the following statement:

"These threshold values, which are to be normalized if the comparable fuel is below 10,000 BTU/lb, are listed below."

Ciba believes that where concentration limits are given at 10,000 BTU/lb in Table 1 to 261.38, normalization should work both ways. Threshold levels should be normalized to 10,000 BTU if the BTU of the fuel is above or below 10,000 BTU. Ciba requests that the statement in these four specific conditions be changed to:

"These threshold values, which are to be normalized to 10,000 BTU/lb, are listed below."

Response #14: After examination of the comments to the rule, it appears as if EPA intended for the comparative fuel be normalized to 10,000 BTU/lb even for fuels with a heating value above 10,000 BTU/lb. Therefore, Specific Conditions 18, 19, 26, and 27, have been modified to state that the threshold values are to be normalized to 10,000 BTU/lb as requested.

Comment #15: The P4 Production unit does not have conditions similar to the other units for hourly HAP and VOC emission compliance.

Response #15 Conditions 32 and 33 have been added to the final permit to require hourly emission compliance for HAP and VOC.

ADEQ

ARKANSAS
Department of Environmental Quality

December 15, 2008

Jim Morse
Environmental Manager
Ciba Speciality Chemicals Corporation
100 Bridgeport Road Industrial Park
West Memphis, AR 72301


Dear Mr. Morse:

The enclosed Permit No. 0860-AR-3 is your authority to construct, operate, and maintain the equipment and/or control apparatus as set forth in your application initially received on 7/20/2007.

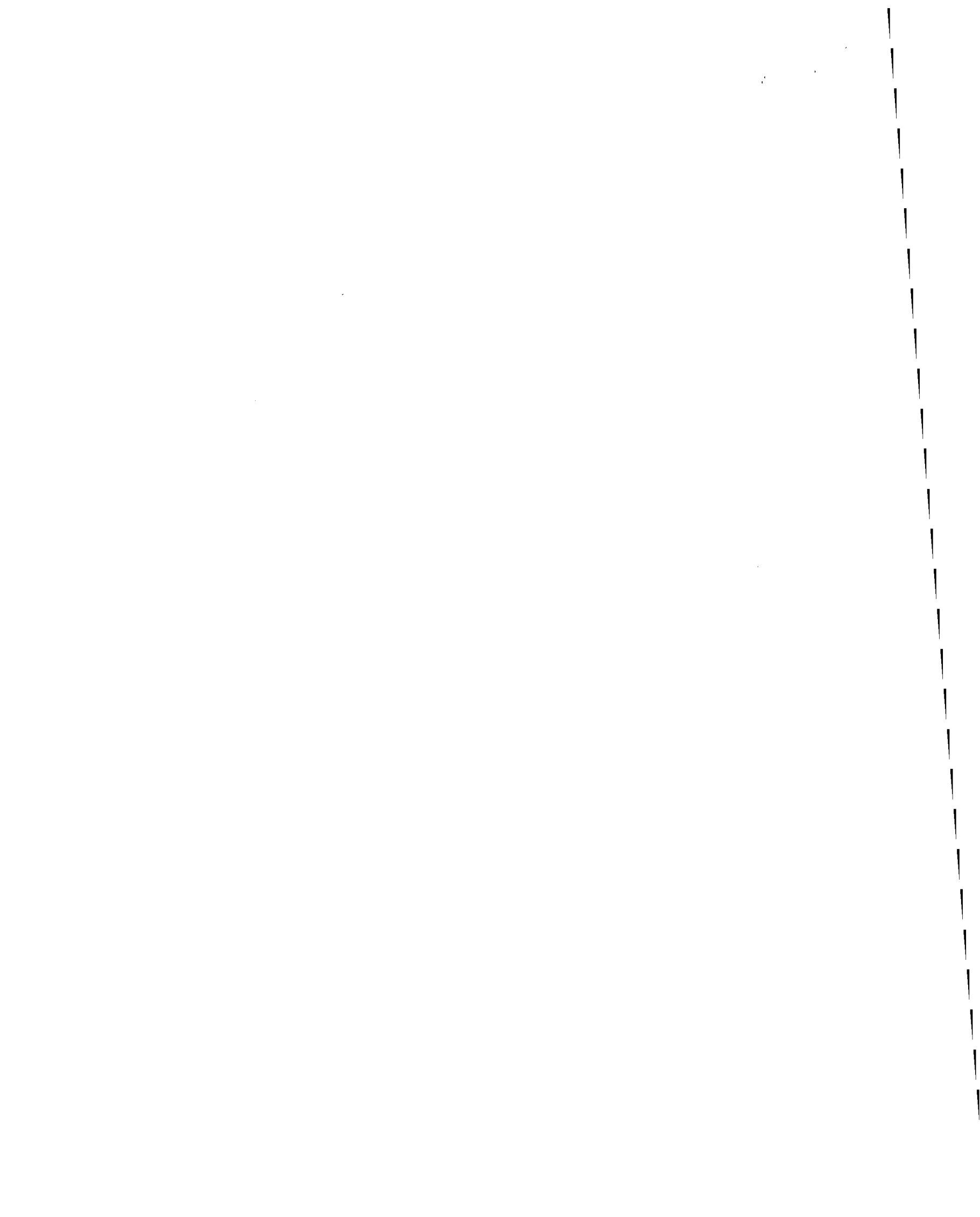
After considering the facts and requirements of A.C.A. §8-4-101 et seq., and implementing regulations, I have determined that Permit No. 0860-AR-3 for the construction, operation and maintenance of an air pollution control system for Ciba Speciality Chemicals Corporation to be issued and effective on the date specified in the permit, unless a Commission review has been properly requested under §2.1.14 of Regulation No. 8, Arkansas Department of Pollution Control & Ecology Commission's Administrative Procedures, within thirty (30) days after service of this decision.

All persons submitting written comments during this thirty (30) day period, and all other persons entitled to do so, may request an adjudicatory hearing and Commission review on whether the decision of the Director should be reversed or modified. Such a request shall be in the form and manner required by §2.1.14 of Regulation No. 8.

Sincerely,



Mike Bates
Chief, Air Division



ADEQ MINOR SOURCE AIR PERMIT

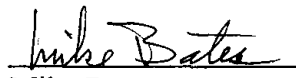
Permit No. : 860-AR-3

IS ISSUED TO:

Ciba Corporation
West Memphis, AR 72301
Crittenden County
AFIN: 18-00081

THIS PERMIT IS THE ABOVE REFERENCED PERMITTEE'S AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DEPARTMENT'S MINOR SOURCE AIR PERMIT AND THE APPLICATION. THIS PERMIT IS ISSUED PURSUANT TO THE PROVISIONS OF THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT (ARK. CODE ANN. SEC. 8-4-101 *ET SEQ.*) AND THE REGULATIONS PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:


Mike Bates
Chief, Air Division

December 15, 2008
Date

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Table of Contents

Section I: FACILITY INFORMATION.....	Section
Section II: INTRODUCTION.....	5
Section III: PERMIT HISTORY	15
Section IV: EMISSION UNIT INFORMATION.....	19
P1 Building	23
P2 Building	25
P3 Building	26
P4 Building	29
Non-Stack Sources.....	34
Miscellaneous Section	35
Section V: INSIGNIFICANT ACTIVITIES	39
Section VI: GENERAL CONDITIONS	40
Appendix A – 40 CFR 60 Subpart Dc	
Appendix B – 40 CFR 60 Subpart Kb	
Appendix C – 40 CFR 60 Subpart NNN	
Appendix D – 40 CFR 60 Subpart RRR	

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

List of Acronyms and Abbreviations

A.C.A.	Arkansas Code Annotated
AFIN	ADEQ Facility Identification Number
CFR	Code of Federal Regulations
CO	Carbon Monoxide
HAP	Hazardous Air Pollutant
lb/hr	Pound Per Hour
No.	Number
NO _x	Nitrogen Oxide
PM	Particulate Matter
PM ₁₀	Particulate Matter Smaller Than Ten Microns
SO ₂	Sulfur Dioxide
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Section I: FACILITY INFORMATION

PERMITTEE:	Ciba Corporation
AFIN:	18-00081
PERMIT NUMBER:	860-AR-3
FACILITY ADDRESS:	100 Bridgeport Road Industrial Park West Memphis, AR 72301
MAILING ADDRESS	Same as above
COUNTY:	Crittenden
CONTACT POSITION:	Jim Morse
TELEPHONE NUMBER:	(870) 735-8750
REVIEWING ENGINEER:	Paula Parker
UTM North - South (Y):	3891.17
UTM East - West (X):	764.46 Zone 15

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Section II: INTRODUCTION

Summary of Permit Activity

Ciba Corporation (AFIN# 18-00081), located at 100 Bridgeport Road in West Memphis, AR, owns and operates a facility which manufactures intermediate synthetic organic chemicals used in water treatment applications. The intermediate chemicals produced at Ciba include crude glycidyl ethers and (meth)acrylic esters.

As a result of this permit modification, the facility is now a minor source. The facility has taken limits and has revised processes in order to reduce emissions below Title V thresholds. Furthermore, due to their status as a minor source, the facility is not subject to NESHAP FFFF. Permitted criteria pollutants are decreasing by 0.6 PM/PM₁₀, 0.3 tpy SO₂, 448.0 tpy VOC, 0.2 tpy CO, and 1.6 tpy NO_x. Permitted total HAP emissions are decreasing by 87.50 tpy.

Process Description

P-1 Process Building

TAAC Process R-104 (P1-1)

Reactor 104 is used to produce tetraallyl ammonium chloride (TAAC). This emission source consists of a reactor vessel, a water cooled condenser, and a continuously circulated caustic packed scrubber.

The crude TAAC is produced by reacting triallylamine (TAA) with allyl chloride. The unit is vented to a caustic scrubber during the vent down cycle following the reaction. The crude aqueous product is cut to storage and fresh TAA is charged into the remaining unreacted raw materials, followed by feeding allyl chloride to complete the next batch. The process continues, charging on the remaining unreacted raw materials. After crude production is complete, the crude is charged back to the reactor where it is heated and stripped under vacuum with caustic addition. Once the product meets specifications, it is collected and transferred to storage.

Poly Epiamine Process R-106 (SN-P1-3) and R-114 (SN-P1-4)

Reactor 106 and Reactor 114 are uncontrolled emission sources consisting each of a reactor vessel. This process reacts dimethylamine (DMA) with epichlorohydrin in the presence of water in a closed reactor. The system is closed during the charging and reaction. This process produces poly epiamines for use as a flocculent. The process is only vented to atmosphere before charging and again at the end of the batch run.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Tank Farm #500 (SN-P1-5)

The majority of these tanks contain water based products. Emissions are assumed to be essentially negligible for all tanks except T-520, V-1212, and V-1213. Tanks 1212 and 1213 are physically located in the P-3 unit but work in unison with other tanks in the farm.

Crude mDMDAC Process Reactor R-107 for mDMDAC Service (SN-P1-9)

Crude dimethyl diallyl ammonium chloride (mDMDAC) is produced by reacting dimethylamine (DMA) with allyl chloride and sodium hydroxide. The initial charging step and subsequent reaction occur in a closed system. The reactors are not vented, and no emissions occur. Following this reaction, the reactors contain the product mDMDAC in an aqueous phase, as well as a small organic phase consisting of unreacted allyl chloride and byproduct allyl alcohol. The units enter a vent down cycle, in which the unreacted contents of each reactor's vapor space are vented through the water/glycol condenser, and then through a new packed-column caustic (NaOH) scrubber to the atmosphere. Once the reactors are vented, a water strip and allyl alcohol strip are performed. Uncondensed organics from the strip processes are also routed through the condenser and caustic scrubber. When product specifications are achieved, the product is pumped to storage.

P-2 Process Building

Quat Process R-101 (SN-P2-1) and R-109 (SN-P2-5)

Reactor 101 and 109 are used to produce methyl chloride quat. These emission sources consist of a reactor vessel and an amine scrubber.

The Quat Process involves an initial charging step, in which a heel of quat is charged and heated. Then, an initial quantity of methyl chloride is fed into a closed reactor vessel and a continuous flow of methyl chloride and (meth)acrylate ester is co-fed into the reactor to begin the reaction. There is no venting during the reaction, and the vessel pressure increases as unreacted methyl chloride and air accumulates in the vapor space. As the reaction proceeds, water is also fed into the reaction.

When the reaction is completed, the unreacted methyl chloride and air in the vapor space is vented to the scrubber. Remaining methyl chloride is stripped from the reactor contents under vacuum. With the exception of unreacted methyl chloride, the contents of the reactor during the time the unit is vented to the scrubber are non-volatile. In the scrubber, a single-stage venturi contacts the vented methyl chloride with a circulating stream of (meth)acrylate ester. A majority of the methyl chloride reacts with the (meth)acrylate ester to produce quat, which is recycled back to the reactor in a subsequent batch.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

DMDAC Polymer, Copolymer, and Terpolymer Process
R-102 (SN-P2-2) and R-103 (SN-P2-3)

Reactors 102 and 103 are used to produce diallyldimethylammonium chloride homopolymers and copolymers by polymerizing an aqueous solution of monomer DADMAC with or without aqueous acrylamide. These emission sources consist of a reactor vessel and a water-cooled overhead condenser. The reactors are vented to the atmosphere during the entire production process.

DMDAC copolymers are produced by reacting an aqueous solution of mDMDAC with aqueous acrylamide as a second monomer. Therefore, this reaction will produce the acrylamide copolymer. DMDAC polymers are produced by reacting an aqueous solution of mDMDAC. This reaction produces a DMDAC homopolymer. The reactor is vented to the atmosphere during the entire process, which includes an initial charging step and reaction. Some products require a nitrogen sparge before or after the reaction. The batch is diluted with water to fulfill customer specifications.

Reactors 102 and 103 yield three products, a DADMAC polymer, a DADMAC acrylamide copolymer, and a DADMAC terpolymer, that are made in a similar process.

Pour Point Depressant
R-101 (SN-P2-4)

XPDL 649 and VII are pour point depressants. They are produced in a batch reaction combining monomers and a carrier oil in the presence of a peroxide initiator. The final product is used as an additive in petroleum to help prevent freezing of oil at low temperatures.

Tank Farm #100
(SN-P2-6)

Tank Farm #100 is located in the P2 processing area.

P-3 Process Building

There are five similar reactor units in P-3. Five types of operations are run in this equipment. Process equipment in this section consist of reactors, fractionation column, main and vent condensers, an a two-stage caustic scrubber.

Tank Farm 600 Control

Several storage tanks, located at Tank Farm 600, are routed to the P3-1 scrubber.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Trans Esterification
R-110, R-112, R-113, R-115, and R-116 (all under Source SN-P3-1)

Methyl (meth)acrylate reacts with alcohol in the presence of a catalyst. This reaction yields the (meth)acrylate ester and methanol. The reaction takes place in a solvent media of cyclohexane and/or heptane. P-3 also has the capability to react ethyl acrylate with an alcohol. This produces an acrylate ester and a side product of ethanol. (Meth)acrylate esters are produced in all P-3 reactors.

Direct Esterification
R-112 and R-113 (SN-P3-1)

(Meth)acrylic acid reacts with alcohol in the presence of a catalyst. This reaction yields (meth)acrylate ester and water. The reaction takes place in a solvent media of cyclohexane and/or heptane. (Meth)acrylate esters may be produced by the direct esterification route in R-112 and R-113.

Epoxidation
R-110, R-112, and R-113 (SN-P3-1)

Alcohol is reacted with epichlorohydrin in the presence of a catalyst to produce monochlorohydrin. The monochlorohydrin is reacted with caustic in a wash tank before final distillation in a reactor.

Ether Distillation
R-110, R-112, R-113, R-115, and R-116 (SN-P3-1)

After the production of the crude monochlorohydrin, the material is transferred to a wash tank and reacted with caustic to produce crude glycidyl ether. The ether is then distilled in the reactors to specification.

Solvent Recovery
R-110, R-112, R-113, R-115, and R-116 (SN-P3-1)

Solvents from esterification are distilled in these reactors for reuse in future reactions.

Tank Farm 600
(SN-P3-2)

The tank farm consists of several vessels of varying capacities which are used to store components or products of reactions. Several storage tanks are routed to the P3-1 scrubber. Emissions for a 500 gallon ester wash tank are also included at this source.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Tank Farm 400
(SN-P3-3)

Tank Farm #400 is located in the P3 Processing Area. Some tanks are under pressure and equipped with vapor recovery/recirculation or contain water based products. These tank farms consist of several vessels of varying capacities which are used to store components or products of reactions.

Boiler #1 (SN-P3-4) and Boiler #3 (SN-P3-6)

Boiler #1 and Boiler #3 are used to supply steam for facility processes (Boiler #2 has been removed from service). Boiler #1 is natural gas-fired with a design heat input of 33.5 MMBTU/hr. Boiler #3 is allowed to use natural gas, by-product methanol, or byproduct isopropanol on a continuous basis. The methanol may be either from the P3 or P4 plants. The design heat input of Boiler #3 is 29.4 MMBTU/hr. Boiler emission estimates have been calculated at maximum capacity, assuming year-round operation at worst-case scenario. Boiler #1 and Boiler #3 are subject to the requirements of 40 CFR Part 60, Subpart Dc (Standards for Small Industrial-Commercial-Institutional Steam Generating Units). Both boilers in this process area are allowed to use No. 2 fuel oil for a period of 30 days.

Fire Emergency Pump
SN-P3-7

A 300-horsepower diesel-fired power the fire water pumps, if necessary, to provide copious amounts of water in case of a plant fire or other emergency event. The fire pump is tested on a weekly basis to ensure operability. This source is limited to 200 hours of operation per year.

Aboveground 500 gallon Storage Tanks
SN-P3-8 and SN-P3-9

SN-P3-8 is used to store gasoline for plant vehicles. SN-P3-9 stores diesel fuel used for the Fire Water Pump, SN-P3-7.

Wash Tanks
SN-P3-10

The esters produced in the reactors are washed in the wash tanks, V-643, V-644, B-645, and V-646, with water, dilute caustic, and/or brine (sodium chloride) to remove excess acid, catalyst, and impurities. On occasion, the wash tanks can be used for a process rework. Emissions from the wash tanks are controlled by the SN-P3-1 scrubber/condenser system. The tanks are, on occasion, rinsed with methanol.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Methanol Recovery
SN-P3-11

The by-product methanol/water streams from the trans-esterification processes are mixed with caustic to saponify residual (meth)acrylate. A portion of the methanol/water solution is then distilled in R-112, R-110, R-113, R-115, R-116 (SN-P3-1) or the methanol recovery still for recovery. The remaining portion is shipped off-site for recovery. Emissions from the methanol recovery still are controlled by the SN-P3-1 scrubber/condenser system.

Tank Farm #700
SN-P3-12

Tank Farm #700 is located in the P-3 processing area. All of its vessels are under pressure and equipped with vapor recovery/recirculation. Emissions from these sources are negligible.

P4 Building

Catationic Monomer Process
SN-P4-1

The Catationic Monomer Plant (P-4 Process) is dedicated to the production of Dimethyl Amino Ethyl Acrylate (FA-1) and $Ti(DME)_4$.

The reaction section of the process consists of two (2) continuous stirred tank reactors. Methyl acrylate (MAC), catalyst, and other reactants are fed into the primary reactor, which will operate in series with the remaining reactor. Reactor contents are then sent through several separation steps; some streams are collected as product, while others will be reused in later reactions.

Off-gases are scrubbed before being passed through a carbon absorber and being vented to the atmosphere. The off-gases are scrubbed with sodium hydroxide solution followed by sulfuric acid solution before being passed through a carbon adsorber. The adsorber gases are vented to the atmosphere.

The caustic scrubbers, consisting of two random packed towers, operate in series but have the ability to be bypassed to allow for recharging. The sulfuric acid scrubbers consist of two random packed towers. The plant control system automatically shuts down the process plant unless a minimum circulation flow on one caustic and one acid scrubber is being measured.

P4 Tank Farm
SN-P4-2

The P4 unit at Ciba is dedicated to the production of Dimethyl Amino Ethyl Acrylate (FA-1) and catalyst. This unit has a dedicated tank farm area for raw materials and products/byproducts.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Rail/Truck/Drum Stations in P4
SN-P4-3

Loading/unloading losses are the sources of evaporative emissions from rail tank cars, tank trucks, and drumming operations.

P4 Equipment Leaks
SN-P4-4

Fugitive emissions from processes and equipment from the P4 section comprise this source. The facility has a leak detection and repair program for the P4 plant.

Boiler #4 (SN-P4-5)

Boiler #4 (SN-P4-5) operates to generate steam, which is used in various chemical processing operations. The boiler is equipped to burn either natural gas, methanol/isopropanol byproduct or, No. 2 fuel oil (10,000 gallon oil tank, SN-P4-6). Boiler emission estimates have been calculated at maximum capacity, assuming year-round operation. Boiler #4 is subject to the requirements of 40 CFR Part 60, Subpart Dc (*Standards for Small Industrial-Commercial-Institutional Steam Generating Units*).

Fuel Oil Tanks (2)
SN-P4-6 and SN-P4-2

These 25,000 gallon aboveground storage tanks are used to store fuel for the boilers. The tanks are usually filled once a year.

Non-Point Sources

Loading/Unloading for Plants P1, P2, and P3
SN-FS-1

Loading and unloading losses in P1, P2, and P3 occur through evaporation at drums, rail tank cars, and tank trucks.

Equipment Leaks for Plants P1, P2, and P3
SN-FS-2

Fugitive emissions from processes and equipment from the P1, P2, and P3 sections comprise this source. The facility has a leak detection and repair program for these plants.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Wastewater Fugitives
SN-FS-3

The new plant is designed to process approximately 150 gallons per minute of raw effluent water. The plant design consists of five treatment sections. The raw process wastewater from the four site production units will be: 1) pH-adjusted; 2) equalized; 3) subjected to aerobic biological treatment; 4) clarified by ultra-filtration; and 5) thicken and mechanically dewater excess biological sludge before disposal. The wastewater treatment plant also has two closed tanks of 5,000 gallons each.

Miscellaneous Sources

Emergency Electrical Generator (for lab)
SN-MI-1

The 180 hp diesel-fired generator, SN-MI-1, will be used to generate emergency power for the lab and is limited to 200 hours of maintenance and testing operation, annually.

Emergency Electrical Generator (By P-2)
SN-MI-2

A 1500 hp diesel fired generator provides electrical generation in the event of a power outage or other emergency event. The generator is tested on a weekly basis to ensure operability.

Fire Protection Generator (WWTP/Instrumentation)
SN-MI-3

A 1500 hp diesel fired generator provides electrical generation in the event of a power outage or other emergency event to the water pumps and to the plant instrumentation. The generator is tested on a weekly basis to ensure operability.

Electrical Generator (400 kW/600 HP – P4)
SN-MI-4

A 600 hp diesel fired generator provides electrical generation in the event of a power outage or other emergency event to the water pumps and to the plant instrumentation. The generator is tested on a weekly basis to ensure operability.

Electrical Generator (80kW/108HP – Control Room)
SN-MI-5

108 hp, diesel fired generator to provide emergency power to the central control room. The source operates 100 hours per year.

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

Regulations

The following table contains the regulations applicable to this permit.

Source No.	Regulation
All Sources	Arkansas Air Pollution Code (Regulation 18) effective February 15, 1999
All Sources	Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation 19) effective October 15, 2007
SN-P4-2	NSPS Subpart Kb
SN-P3-4 SN-P3-6 SN-P4-5	NSPS Subpart Dc
SN-P4-1	NSPS Subpart NNN
	NSPS Subpart RRR

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

Total Allowable Emissions

TOTAL ALLOWABLE EMISSIONS		
Pollutant	Emission Rates	
	lb/hr	tpy
PM	11.1	4.2
PM ₁₀	11.1	4.2
SO ₂	58.0	18.6
VOC	62.6	88.7
CO	38.1	37.9
NO _x	154.3	75.3
Acetone	34.2	1.9
Acrylamide ^{HAP}	0.02	0.02

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

TOTAL ALLOWABLE EMISSIONS		
Pollutant	Emission Rates	
	lb/hr	tpy
Acrylic Acid ^{HAP}	0.10	0.42
Allyl Chloride ^{HAP}	1.48	0.87
Epichlorohydrin ^{HAP}	0.10	0.28
Methanol ^{HAP}	3.65	6.80
Methyl Methacrylate ^{HAP}	8.58	5.80
Methyl Chloride ^{HAP}	1.13	4.96
Total HAP	15.06	19.15

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Section III: PERMIT HISTORY

- 860-A Initial permit issued on 03/26/90 which consolidated air permit issued to CPS Chemical, encompassing all existing sources.
- 860-AR-1 Permit issued on 04/28/92. This permit acknowledged the applicability of NSPS Subpart Kb in relation to tanks T-400 and T-401. Also the tank farm emissions were bubbled into a single source designation.
- 860-AR-2 A new reactor, R-107, into building P-1 was permitted and sources were organized into three main process areas, P-1, P-2, and P-3. Permit was issued on 08/12/96.
- 860-AOP-R0 Initial Title V permit assigned to the facility on 07/10/00. Due to the installation of two unpermitted sources, the facility was required to submit a PSD application. After reviewing the PSD application, the Department accepted the facility's proposal for BACT. The Department incorporated the proposed controls as a requirement of Operating Air Permit 860-AOP-R0. In requiring the control as a federally enforceable limit, the issuance of a PSD air permit was not required. The applicability of major source status under PSD first became clear in early 1997, when the facility and its consultant performed a comprehensive re-analysis of existing emissions generated by the facility. During this inventory, it was discovered that existing but newly quantified fugitive emissions brought the VOC emission total to a level beyond 100 tons per year, the major source threshold for the chemical plant category under PSD.

At the time of Title V permit application submittal in March of 1998, the facility (then CPS Chemical) reported to the Department that two wash tanks (V1212 and V1213, SN-P3-10a) had been installed in 1991 without authorization. In addition to violating the terms of Air Permit 860-A, the facility stated that the combined potential emissions from these tanks may have exceeded the significant increase threshold for VOC under the regulations of PSD. The Department responded by issuing Consent Administrative Order LIS: 98-073. One of the Order's conditions required the facility to submit a historical PSD permit application. In September of 1998, the facility submitted the PSD application, which included an applicability review, a Best Available Control Technology (BACT) analysis, and an air quality analysis. After reviewing the PSD application, the Department accepted the facility's proposal for BACT: the installation of chilled vent condensers as control equipment for the wash tanks. Additionally, the Department approved the facility's plan to implement a leak detection and repair (LDAR) program for the P-3 plant, which houses the tanks. The condenser efficiency was estimated at 90% for VOC reduction, and the LDAR program at 95% for fugitive VOC.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

The application of the chilled vent condenser systems to the wash tanks reduced their potential to emit from 58 to 5.8 tons per year, below the PSD significant increase threshold. The Department has incorporated this proposed control as a requirement of Operating Air Permit 860-AOP-R0. In requiring the control as a federally enforceable limit, the issuance of a PSD air permit was not required for the tanks.

In addition to the previously installed wash tanks, VOC increases from new process modifications were also examined for PSD applicability during the application review. The units in the P3 process contributed 14.1 ton/yr in VOC emissions, while the P4 process line resulted in a total of 38.3 ton/yr of VOC. Since the P3 and P4 processes were not related (they share no common equipment or materials, and neither process depends upon the other), their combined emission increases did not constitute a PSD review for this permitting action.

- 860-AOP-R1 This minor modification, issued 04/18/01, was concerned with the usage of two reactors, 106 and 114, in the P1 manufacturing section. In addition to their current use, they were allowed to produce DMDAC polymers in a similar fashion as in the P2 section.
- 860-AOP-R2 Three modifications were incorporated in this permit. One entailed additional service to the T-600 tank farm (SN-P3-2), involving an allowance for cyclohexane/methyl methacrylate processing at tanks T-606, T-620, T-623, and T-627. Secondly, Boiler #3 (SN- P3-6) was allowed to utilize by-product methanol as a fuel source under the EPA's guidelines for alternative fuels. Third, an emission limit for Reactor 108 (R-108) in source P2-4 was corrected. Permit was issued 09/18/01.
- 860-AOP-R3 The minor modification allowed the manufacture of additional water treatment chemicals in its P-3 process unit. Reactors in the P3-1 process unit were permitted for additional service. Five tanks were installed, two in the 600 Tank Farm (SN-P3-2) and three tanks in the 400 Tank Farm (SN-P3-3). Permit issued on 4/26/02.
- 860-AOP-R4 The permit was issued on 10/29/02. The minor modification affected sources P2-4 (Reactor 108), P3-1 (the P3 reactors), and P3-10a & b (Wash Tanks). Changes were made to the permit limits for these sources to more accurately reflect calculations for the trans-esterification process. Changes were also made at these sources to reflect an increase in sparge rates due to safety considerations, the main focus being to prevent an explosive atmosphere. A typographical correction was also made to include fugitive HAP emissions previously quantified for SN-FS-3 in the emission summary table and in Plantwide Condition 7.
- 860-AOP-R5 The permit was issued on 5/11/2004. The facility made the following changes to the permit: added a new product, TAAC (tetraallylammonium chloride), for

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

the R-104 reactor (SN-P1-1); added isopropanol as a recovered solvent under R-110, 112, 113, 115, and 116 (SN-P3-1); revised the testing requirements for methanol by-product fuel at Boiler #3 (SN-P3-6); allowed an annual 4-hour testing and maintenance event at the Emergency Electrical Generator, Fire Protection Generator, and Electrical Generator (SN-P4-9, SN-P4-10, and SN-P4-11); added methanol rinsing allowances to the Wash Tanks (SN-P3-10); revised emission calculations for the Inhibitor Vats (SN-P3-13); revised emission calculations for loading at FS-1; added a 180 hp diesel-fired electrical emergency generator (SN-MI-1); and allowed combustion of an isopropanol by-product in Boiler #3. Additionally, the process descriptions for the P1 and P2 buildings were corrected, as well as several other typographical errors.

- 860-AOP-R6 The permit was issued on 11/18/2004. This modification authorized the facility to perform the following: to manufacture a new product, a terpolymer compound, in the R-102 and R-103 (SN-P2-2 and SN-P2-3) reactors; to manufacture NNDMA (N,N-dimethylacrylamide), in the R-108 reactor (SN-P2-4); to install a 20,000 gallon tank in the P4 unit; to replace the existing open neutralization basin with two closed tanks of approximately 5,000 gallons each (SN-FS-4); and to add methanol loading at FS-1 (which was previously removed), along with loading of methyl methacrylate, cyclohexane, heptane, and NNMDA.
- 860-AOP-R7 Issued on 07/12/2005, the permit modification incorporated the following changes to their permit: to revise allyl chloride emissions at Reactors 104, 105, and 107 for mDMDAC (SN-P1-9) on the basis of testing; to allow sampling at the start and at the end of venting operations of the scrubbers at Reactors 101 and 109 (SN-P2-1 and SN-P2-5); to allow manufacture of FA-1 in the R-108 reactor (SN-P2-4) and P3 reactors (SN-P3-1) using ethyl acrylate; to revise NO_x emission estimates at Boiler #3 (SN-P3-6) for combustion of isopropanol or methanol fuels; to revise the sampling requirements of the P4 Cationic Monomer Reactors (SN-P4-1); to recalculate emission estimates of Tank Farm 100 (SN-P2-6), Tank Farm 600 (SN-P3-2) P4 Loading/Unloading (SN-P4-3), and Loading/Unloading P1, P2, P3 (SN-FS-1); and the addition of a new wastewater treatment plant (SN-FS-3A).
- 860-AOP-R8 Issued on 01/04/2006, this permit renewal encompassed the following changes: SN-P1-6 (Tank Farm 300) was removed; short term emissions from SN-P3-4 (Boiler #1), P3-6 (Boiler #3), and P4-5 (Boiler #4) were changed to reflect No. 2 fuel oil use during natural gas curtailment situations; annual emissions from SN-P3-4 (Boiler #1), P3-6 (Boiler #3), and P4-5 (Boiler #4) were recalculated with current AP-42 factors; FS-2 (Equipment Leaks for the P1, P2, and P3 Processes) were recalculated; CAM requirements have added for several sources; SN-P3-14 and P3-15 (10,000 gallon diesel tanks) were removed; NSPS Kb and NNN requirements have been updated; and the Emergency Electrical Generator (by P-2), Fire Protection Generator (WWTP/Instrumentation) and Electrical Generator (SN-P4-9, 10, and 11) have been renamed to SN-MI-2, MI-3, and MI-4 in the

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

Miscellaneous Sources section. A period of 30-days of fuel oil usage during natural gas curtailment situations was added to the permit along with a commensurate increase in criteria pollutants. This change affected SN-P3-4, SN-P3-6, and SN-P4-5.

- 860-AOP-R9 The permit revision, issued 3/29/06, increased the allowable allyl chloride at SN-P1-9 from 1.00 lb/hr to 4.03 lb/hr with a commensurate increase in annual emissions of allyl chloride due to the variability of hourly emissions. The facility has also requested a minor modification to their permit in order to allow for No. 2 fuel oil usage at any time for SNP3-1, SN-P3-6, and SN-P4-5. The permit had previously specified fuel oil usage only during periods of natural gas curtailment. Emissions for these sources take into account a 30-day period of fuel oil usage, and therefore, there are no permitted emission increases.
- 860-AOP-R10 The permit was issued on 07/27/2006. The facility requested a minor modification to their current permit in order to incorporate the following changes: To recalculate epichlorohydrin emissions from the P1 Building, involving Reactors 104, 105, 106, 114, and 107; To allow for the production of biodiesel at Reactor 104; To increase plantwide HAP from FS-3A so that emissions reflect total annual operation; and to correct a citation error of Specific Condition 56.
- 860-AOP-R11 The permit was issued on 02/20/2007. The facility requested several modifications to perform the following: to install a 108 hp, diesel fired generator, SN-MI-5, to provide emergency power; to burn byproduct methanol/isopropanol in Boiler #4, SN-P4-5; to produce XPDL 649, a pour point depressant, and to add two insignificant activities; and to add Wastewater Sludge Dewatering and Quat Scrubber Feed Tank Charge as A-13 insignificant activities.
- 860-AOP-R12 The permit was issued on 10/17/2007. The facility moved production of a recently permitted product XPDL 649 from R-101 (SN-P2-1) to R-108 (SN-P2-4). Second, the facility will burn part of the P3 plant's methanol byproduct in both Boilers No. 3 and No. 4.

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

Section IV: EMISSION UNIT INFORMATION

- The permittee shall not exceed the emission rates set forth in the following table.
 [Regulation 19, §19.501 et seq., effective October 15, 2007 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
P1 Building				
P1-1	Reactor 104	VOC	4.3	*
P1-3	Reactor 106			
P1-4	Reactor 114			
P1-5	Tank Farm 500			
P1-8	Tank Farm 200			
P1-9	Reactor 107 for mDMDAC			
P2 Building				
P2-1	Reactor 101	VOC	2.9	*
P2-2	Reactor 102			
P2-3	Reactor 103			
P2-4	Reactor 108			
P2-5	Reactor 109			
P2-6	Tank Farm 100			
P3 Building				
P3-1	Reactors 110, 112, 113, 115, 116, P3 Wash System, Methanol Recovery, and some Tanks from Tank Farm 600	PM ₁₀ SO ₂ VOC CO NO _x	1.7 32.7 10.3 7.5 21.6	2.3 11.7 * 23.6 48.6
P3-2	Tank Farm 600			
P3-3	Tank Farm 400			
P3-4	Boiler #1			
P3-6	Boiler #3			
P3-7	Fire Emergency Pump			
P3-8	500 Gallon Gasoline Tank			
P3-9	500 Gallon Gasoline Tank			
P3-12	Tank Farm 700			
P4 Building				

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

SN	Description	Pollutant	lb/hr	tpy
P4-1	P4 Cationic Monomer Reactors	PM ₁₀ SO ₂ VOC CO NO _x	0.5 17.0 6.7 2.9 8.6	1.2 6.2 * 12.4 19.9
P4-2	P4 Tank Farm			
P4-3	P4 Loading/Unloading			
P4-4	P4 Equipment Leaks			
P4-5	Boiler #4			
P4-6	25,000 Gallon Diesel Storage Tank			
P4-8	25,000 Gallon Diesel Storage Tank			
Non-Point Sources				
FS-1	Loading/Unloading/Drumming	VOC	21.0	1.9
FS-2	Equipment Leaks (P1, P2, P3)	VOC	4.8	20.7
FS-3	Wastewater Fugitives	VOC	2.5	10.5
Miscellaneous Sources				
MI-1	Lab Emergency Electrical Generator, 180 hp	PM ₁₀	0.4	0.1
		SO ₂	0.4	0.1
		VOC	0.5	0.1
		CO	1.3	0.2
		NO _x	5.6	0.6
MI-2	Emergency Electrical Generator (by P-2), 1500 hp	PM ₁₀	3.3	0.2
		SO ₂	3.1	0.2
		VOC	3.8	0.2
		CO	10.1	0.6
		NO _x	46.5	2.4
MI-3	Fire Protection Generator (WWTP/Instrumentation), 1500 hp	PM ₁₀	3.3	0.2
		SO ₂	3.1	0.2
		VOC	3.8	0.2
		CO	10.1	0.6
		NO _x	46.5	2.4
MI-4	Electrical Generator (400 kW/600 Hp-P4)	PM ₁₀	1.4	0.1
		SO ₂	1.3	0.1
		VOC	1.5	0.1
		CO	4.1	0.3
		NO _x	18.6	1.0

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

SN	Description	Pollutant	lb/hr	tpy
MI-5	Electrical Generator (80kW/108HP – Control Room)	PM ₁₀	0.5	0.1
		SO ₂	0.3	0.1
		VOC	0.3	0.1
		CO	2.1	0.2
		NO _x	6.9	0.4

*Subject to a combined limit for annual VOC emissions. See Specific Condition #43.

2. The permittee shall not exceed the emission rates set forth in the following table.
 [Regulation 18, §18.801, effective February 15, 1999, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN	Description	Pollutant	lb/hr	tpy
P1 Building				
P1-1	Reactor 104	Epichlorohydrin ^{HAP} Allyl Chloride ^{HAP}	0.04 1.34	* *
P1-3	Reactor 106			
P1-4	Reactor 114			
P1-5	Tank Farm 500			
P1-8	Tank Farm 200			
P1-9	Reactor 107 for mDMDAC			
P2 Building				
P2-1	Reactor 101	Acrylamide ^{HAP} Acrylic Acid ^{HAP} Methyl Methacrylate ^{HAP} Methyl Chloride ^{HAP}	0.02 0.10 0.70 1.05	* * * *
P2-2	Reactor 102			
P2-3	Reactor 103			
P2-4	Reactor 108			
P2-5	Reactor 109			
P2-6	Tank Farm 100			
P3 Building				
P3-1	Reactors 110, 112, 113, 115, 116, P3 Wash System, and Methanol Recovery	PM Acetone Methanol ^{HAP} Methyl Methacrylate ^{HAP}	1.7 0.6 0.53 0.30	2.3 * * *
P3-2	Tank Farm 600			
P3-3	Tank Farm 400			
P3-4	Boiler #1			
P3-6	Boiler #3			

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

SN	Description	Pollutant	lb/hr	tpy
P3-7	Fire Emergency Pump			
P3-12	Tank Farm 700			
P4 Building				
P4-1	P4 Cationic Monomer Reactors	PM Methanol ^{HAP}	0.5 1.26	1.2 *
P4-2	P4 Tank Farm			
P4-3	P4 Loading/Unloading			
P4-4	P4 Equipment Leaks			
P4-5	Boiler #4			
Non-Point Sources				
FS-1	Loading/Unloading/Drumming	Acetone	33.6	0.2
		Methanol ^{HAP}	0.90	0.28
		Methyl Methacrylate ^{HAP}	7.20	0.16
FS-2	Equipment Leaks (P1, P2, P3)	Allyl Chloride ^{HAP}	0.02	0.04
		Methyl Methacrylate ^{HAP}	0.22	0.99
		Epichlorohydrin ^{HAP}	0.06	0.25
		Methanol ^{HAP}	0.48	2.09
		Methyl Chloride ^{HAP}	0.08	0.36
FS-3	Wastewater Fugitives	Allyl Chloride ^{HAP}	0.12	0.53
		Methanol ^{HAP}	0.48	2.20
		Methyl Methacrylate ^{HAP}	0.16	0.71
Miscellaneous Sources				
MI-1	Lab Emergency Electrical Generator, 180 hp	PM	0.4	0.1
MI-2	Emergency Electrical Generator (by P-2), 1500 hp	PM	3.3	0.2
MI-3	Fire Protection Generator (WWTP/Instrumentation), 1500 hp	PM	3.3	0.2
MI-4	Electrical Generator (400 kW/600 Hp-P4)	PM	1.4	0.1

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

SN	Description	Pollutant	lb/hr	tpy
MI-5	Electrical Generator (80kW/108HP – Control Room)	PM	0.5	0.1

*Subject to a combined limit for annual HAP and Acetone emissions. See Specific Condition #43.

3. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN	Limit	Regulatory Citation
SN-P3-7, MI-1, MI-2, MI-3, MI-4, and MI-5	20%	§19.503
SN-P3-4, P3-6, P4-5	5% and 20%	§18.501 and §19.503

4. The permittee shall not cause or permit the emission of air contaminants, including odors or water vapor and including an air contaminant whose emission is not otherwise prohibited by Regulation #18, if the emission of the air contaminant constitutes air pollution within the meaning of A.C.A. §8-4-303. [Regulation 18, §18.801 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
5. The permittee shall not conduct operations in such a manner as to unnecessarily cause air contaminants and other pollutants to become airborne. [Regulation 18, §18.901 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

P1 Building Section

6. The permittee shall maintain the following control device parameters and operations at SN-P1-1 when SN-P1-1 is in operation. [§19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
- A. The permittee shall maintain a liquid flow rate of at least 20 gallons per minute at the scrubber.
- B. The permittee shall maintain a minimum of 10% (weight %) caustic strength at the scrubber.
- C. The permittee shall measure scrubbing fluid flow at SN-P1-1 once every three hours of operation. Flow rates shall be measured by a flow meter. In the event that the permittee must perform maintenance on the flow meter, scrubbing fluid flow may be derived and recorded from a pump curve performance chart.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

- D. Confirmation sampling of the caustic strength of SN-P1-1 shall be performed on a weekly basis. Sampling and analysis of the scrubber fluid shall be conducted prior to discharge operations. Records shall be maintained of the date and time of measurements and the caustic strength of the fluid.
 - E. The sampled values shall be kept in a log at the source in order to verify compliance. These records shall be made available to Department personnel upon request.
7. The SN-P1-1 scrubber shall be charged in accordance with the equipment Standard Operating Procedure (SOP) prior to initiation of a vent down sequence of operation. A record of the vent down operations to the scrubber shall be maintained and shall include a) date and time of vent down operation and b) batch number(s) vented to the scrubber.
- At the conclusion of a reactor vent down cycle, which shall not exceed two batches, the contents of the scrubber will be discharged and the scrubber recharged prior to resumption of reactor vent down operations. A record of the discharge and recharge of each scrubber shall be maintained and shall include a) date and time of recharge and b) batch number(s) vented to the scrubber. [§19.703 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
8. The permittee shall maintain the following control device parameters and operations at SN-P1-9. [§19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311].
- A. The permittee shall maintain a liquid flow rate of at least 17 gallons per minute at the caustic and acid scrubber columns, and a liquid flow rate of at least 30 gallons per minute at the acid scrubber eductor during vent and strip operations.
 - B. The permittee shall maintain a minimum of 10% (weight %) caustic strength at the caustic scrubber and a maximum pH of 5.5 at the acid scrubber.
 - C. The permittee shall not exceed 35°F at the condenser's chilled water inlet. The inlet temperature may be measured at the recirculation loop located at the chilled water tank.
 - D. The permittee shall maintain interlocks on the P1-9 scrubber and vent condenser system that prevent venting of the reaction process if scrubber flows, caustic concentration, acid scrubber pH, and vent condenser temperature do not meet the minimum requirements set out in this plan.
 - E. The permittee must conduct documented checks of interlock operation at least annually.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

9. The permittee shall maintain records of hourly VOC emissions within the P1 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly VOC total divided by the monthly operating hours shall be compared to the hourly VOC emission rate in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
10. The permittee shall maintain records of hourly HAP emissions within the P1 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly HAP total divided by the monthly operating hours shall be compared to the hourly emission rate for that pollutant in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§18.1004 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

P2 Building Section

11. The SN-P2-1 and SN-P2-5 scrubbers shall be charged prior to initiation of each batch of product to be manufactured. A record of each charge shall be maintained and shall include: a) date and time of the charge, b) quantity of amine charged, and, c) quantity of water charged. Records to demonstrate amine concentration (wt%) shall be maintained and made available to Department personnel upon request.

To perform maintenance or to shutdown one of the quat reactors, two reactor batches may be vented to one scrubber charge, as long as the permittee confirms that the amine concentration of the scrubber is a minimum of 95%.

At the conclusion of each batch cycle, the contents of the scrubber shall be discharged for use in the next batch of product to be manufactured. A record of the discharge of the scrubber shall be maintained and shall include: a) date and time of the discharge, and b) subsequent batch number manufactured. [§19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
12. The permittee shall maintain the following control device parameters and operations at SN-P2-1 and SN-P2-5. [§19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - A. The permittee shall maintain a liquid flow rate of at least 15 gallons per minute at the scrubber eductors and a flow rate of at least 17 gallons per minute at the scrubber columns for SN-P2-1 and SN-P2-5 during reactor venting and stripping operations.
 - B. The permittee shall maintain a minimum of 95% (weight %) amine at the scrubber. Amine concentration shall be verified by the water and amine charge weights as required by Specific Condition #11.
 - C. The permittee shall maintain interlocks on the P2 scrubbers at SN-P2-1 and SN-P2-5 that prevent venting of the reaction process if scrubber flows do not meet the minimum requirements set out in this plan.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

- D. The permittee must conduct documented checks of interlock operation at least annually.
- 13. The permittee shall maintain records of hourly VOC emissions within the P2 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly VOC total divided by the monthly operating hours shall be compared to the hourly VOC emission rate in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
- 14. The permittee shall maintain records of hourly HAP emissions within the P2 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly HAP total divided by the monthly operating hours shall be compared to the hourly emission rate for that pollutant in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§18.1004 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

P3 Building Section

- 15. The permittee shall maintain the following control device parameters and operations at SN-P3-1. [§19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - A. The permittee shall maintain a liquid flow rate of at least 17 gallons per minute at the caustic and water scrubber columns, and a liquid flow rate of at least 30 gallons per minute at the caustic and water scrubber eductors during operation.
 - B. The permittee shall maintain a minimum of 10% (weight %) caustic strength at the caustic scrubber during operation. Caustic strength will be monitored at least every three hours by an inline autotitrator. During periods of maintenance on the titrator, titration can be carried out manually.
 - C. The permittee shall measure scrubbing fluid flows every four hours by means of a flow meter. During required flow meter maintenance, scrubbing fluid flow may be derived from a pump curve performance chart. Measurement and logging of flow may be accomplished by use of a computerized flow monitoring and data logging system.
 - D. The permittee shall not exceed 35°F at the vent condenser's chilled water inlet for the wash tanks, reactors, and methanol still. The inlet temperature may be measured at the recirculation loop located at the chilled water tank.
 - E. The permittee shall record chilled water temperature every three hours of operation. Measurement and logging of temperature may be accomplished by use of a computerized flow monitoring and data logging system.
 - F. Electronic flow, caustic concentration, and temperature data will be maintained and made available to Department personnel upon request.

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

- G. Periods of scrubber maintenance during which flow and/or caustic concentration cannot be maintained must be logged at the site. During these periods of maintenance, no reaction processes or material transfers controlled by the scrubbers may occur.
16. The Boiler #1 and Boiler #3 (SN-P3-4 and SN-P3-6) shall fully comply with all applicable requirements of the 40 CFR 60 Subpart Dc - *Standards for Small Industrial-Commercial-Institutional Steam Generating Units* (see Appendix). These requirements include, but are not limited to, the following. [§19.304 of the Regulation 19 and 40 CFR Part 60 Subpart Dc]
- A. For natural gas combustion:
- Recordkeeping* [from 60.48c(g), (i)]. Amounts of each fuel combusted shall be recorded on a monthly basis. The records shall be maintained by the facility for a period of two years following the date of recording.
- B. For by-product methanol and/or isopropanol combustion at Boiler #3 (SN-P3-6) only.
- Recordkeeping* [from 60.48c(g), (i)]. Amounts of each fuel combusted shall be recorded on a daily basis. The records shall be maintained by the facility for a period of two years following the date of recording.
- C. For No. 2 fuel oil:
- Sulfur Standards* [60.42c(d)]. Sulfur content shall be limited to 0.5 or less weight percent.
- Sulfur Limit Compliance* [from 60.46(e)] Compliance with the sulfur content limits shall be demonstrated by certification from the fuel supplier as described under 60.48c(f).
- Recordkeeping* [from 60.48c(g), (i)]. Amounts of each fuel combusted shall be recorded on a monthly basis. The records shall be maintained by the facility for a period of two years following the date of recording.
- Quarterly Reporting* [from 60.48c(d), (e), (e)(1), (e)(5)-(6), (e)(11), (f)] Submit quarterly reports of 30-day average SO₂ emission rate (ng/J or lb/million Btu) or 30-day average sulfur content, records of fuel supplier certification as described under paragraph (f), and a certified statement signed by the owner or operator that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

17. The permittee shall not use more than 4,600,000 gallons of by-product methanol and isopropanol, combined, as fuel at SN-P3-6 (Boiler #3) per rolling 12-month period. The methanol may be either from the P3 or P4 plants. Compliance with this condition shall be verified by maintaining daily records of the amount of fuel used. These records shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
18. The permittee will sample and analyze the methanol by-product combusted at SN-P3-6 semi-annually in accordance with the methanol by-product analysis plan and the provisions of 40 CFR 261.38 to ensure the constituents listed in this subpart are not present over RCRA threshold amounts. These threshold values, which are to be normalized to 10,000 BTU/lb, are listed below. This condition only applies to methanol by-product from the P4 area. This information shall be kept on site and made available to Department personnel upon request. [§19.304 of Regulation 19 and 40 CFR Subpart 261.38]

Value	Limit
BTU	>5,000 BTU/lb
Total Nitrogen	≤ 4,900
Viscosity	≤ 50 centipoise

19. The permittee will sample and analyze the isopropanol by-product combusted at SN-P3-6 semi-annually in accordance with the by-product analysis plan and the provisions of 40 CFR 261.38 to ensure the constituents listed in this subpart are not present over RCRA threshold amounts. These threshold values, which are to be normalized to 10,000 BTU/lb, are listed below. This information shall be kept on site and made available to Department personnel upon request. [§19.304 of Regulation 19 and 40 CFR Subpart 261.38]

Value	Limit
BTU	> 5,000 BTU/lb
Total Nitrogen	≤ 4,900 mg/kg
Total Chloride	≤ 540 mg/kg
Acrolein	≤ 37 mg/kg
Viscosity	≤ 50 centipoise

20. The permittee shall not operate the Fire Emergency Pumps (SN-P3-7) more than 200 hours combined per rolling 12-month period for testing and maintenance purposes. The permittee may not operate both pumps simultaneously. Records of testing/maintenance operation time shall be maintained on site, updated on a per-event basis, and made available to Department personnel upon request. Operation time required for actual emergency use is not restricted by this permit. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

21. The permittee shall maintain records of hourly VOC emissions within the P3 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly VOC total divided by the monthly operating hours shall be compared to the hourly VOC emission rate in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
22. The permittee shall maintain records of hourly HAP and acetone emissions within the P3 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly HAP or acetone total divided by the monthly operating hours shall be compared to the hourly emission rate for that pollutant in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

P4 Building Section

23. The permittee shall maintain the following control device parameters at SN-P4-1 (P4 Cationic Monomer Reactors). The permittee shall operate at least one caustic scrubber, one acid scrubber, and one carbon absorber at all times at SN-P4-1. [§19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - A. The permittee shall maintain a caustic scrubber liquid flowrate of at least 40 gallons per minute.
 - B. The permittee shall maintain a concentration minimum of 3%, for both caustic and acid media.
 - C. The permittee shall measure scrubbing fluid flow at the SN-P4-1 scrubbers once every three hours of operation with a flow meter. In the event that the permittee must perform maintenance on the flow meter, scrubbing fluid flow may be derived and recorded from a pump curve performance chart.
 - D. The caustic and acid concentrations at the SN-P4-1 scrubbers shall be sampled once every seven days of operation. If sampling shows that an SN-P4-1 scrubber concentration has fallen below 3%, the scrubber shall be regenerated in order to maintain the scrubbing system at a minimum of 3%, for both caustic and acid media.
 - E. The sampled flow values and the sampled caustic and acid concentrations shall be kept in a log at the source. These records shall be made available to Department personnel upon request.
24. Boiler #4 (SN-P4-5) shall fully comply with all applicable requirements of the *Standards for Small Industrial-Commercial-Institutional Steam Generating Units* (see Appendix A). These requirements include, but are not limited to, the following. [§19.304 of the Regulation 19 and 40 CFR Part 60 Subpart Dc]

Ciba Corporation
Permit #: 860-AR-3
AFIN #: 18-00081

A. For natural gas combustion:

Recordkeeping [from 60.48c(g), (i)]. Amounts of each fuel combusted shall be recorded on a monthly basis. The records shall be maintained by the facility for a period of two years following the date of recording.

B. For by-product methanol and/or isopropanol combustion at Boiler #4 (SN-P4-5) only.

Recordkeeping [from 60.48c(g), (i)]. Amounts of each fuel combusted shall be recorded on a daily basis. The records shall be maintained by the facility for a period of two years following the date of recording.

C. For No. 2 fuel oil (see the regulation in Appendix A for details):

Sulfur Standards [60.42c(d)]. Sulfur content shall be limited to 0.5 or less weight percent.

Sulfur Limit Compliance [from 60.46(e)] Compliance with the sulfur content limits shall be demonstrated by certification from the fuel supplier as described under 60.48c(f).

Recordkeeping [from 60.48c(g), (i)]. Amounts of each fuel combusted shall be recorded on a monthly basis. The records shall be maintained by the facility for a period of two years following the date of recording.

Quarterly Reporting [from 60.48c(d), (e), (e)(1), (e)(5)-(6), (e)(11), (f)] Submit quarterly reports of 30-day average SO₂ emission rate (ng/J or lb/million Btu) or 30-day average sulfur content, records of fuel supplier certification as described under paragraph (f), and a certified statement signed by the owner or operator that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

25. The permittee shall not use more than 2,440,000 gallons of by-product methanol and isopropanol, combined, as fuel at SN-P4-5 (Boiler #4) per rolling 12-month period. The methanol may be either from the P3 or P4 plants. Compliance with this condition shall be verified by maintaining daily records of the amount of fuel used. These records shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

26. The permittee will sample and analyze the methanol by-product combusted at SN-P4-5 semi-annually in accordance with the methanol by-product analysis plan and the provisions of 40 CFR 261.38 to ensure the constituents listed in this subpart are not present over RCRA threshold amounts. This condition only applies to methanol by-product from the P4 area. These threshold values, which are to be normalized to 10,000 BTU/lb, are listed below. This information shall be kept on site and made available to Department personnel upon request. [§19.304 of Regulation 19 and 40 CFR Subpart 261.38]

Value	Limit
BTU	>5,000 BTU/lb
Total Nitrogen	≤ 4,900
Viscosity	≤ 50 centipoise

27. The permittee will sample and analyze the isopropanol by-product semi-annually combusted at SN-P4-5 in accordance with the by-product analysis plan and the provisions of 40 CFR 261.38 to ensure the constituents listed in this subpart are not present over RCRA threshold amounts. These threshold values, which are to be normalized to 10,000 BTU/lb, are listed below. This information shall be kept on site and made available to Department personnel upon request. [§19.304 of Regulation 19 and 40 CFR Subpart 261.38]

Value	Limit
BTU	> 5,000 BTU/lb
Total Nitrogen	≤ 4,900 mg/kg
Total Chloride	≤ 540 mg/kg
Acrolein	≤ 37 mg/kg
Viscosity	≤ 50 centipoise

28. The permittee shall fully comply with all applicable requirements of the *Standards of Performance for Volatile Organic Liquid Storage Vessels* (see Appendix) for the following tanks at SN-P4-2. Applicable requirements include, but are not limited to, the items outlined in Specific Condition #46. [§19.304 of Regulation 19 and 40 CFR Part 60 Subpart Kb]

# Tanks	Capacity	Contents
2	32,120 gallon	Byproduct Methanol

29. The Cationic Monomer Plant (SN-P4-1) shall fully comply with all applicable requirements of NSPS Subpart NNN - Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations. Applicable requirements include, but are not limited to, the items outlined below. [§19.304 of Regulation 19 and 40 CFR Part 60 Subpart NNN]

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

Subpart NNN: VOC Emissions for SOCM Distillation Operations	
Emission Unit(s)	<ul style="list-style-type: none"> •Distillation units not discharging vent stream into recovery system. •Combinations of distillation unit(s) and recovery system into which its vent stream(s) is discharged.
Pollutant(s)	VOC
Emission Standard/Avg Time	<ul style="list-style-type: none"> •98% reduction efficiency or reduce concentration to 20 ppmv (dry basis) corrected to 3% O₂, whichever is less stringent/3-hr avg. •Note: If boiler or process heater used to comply, vent stream must be introduced into flame zone.
Monitoring PS/QA Exceedance Level	<p>Incinerator Units:</p> <ul style="list-style-type: none"> •Continuous monitoring and recording of temperature: <ul style="list-style-type: none"> -in firebox (thermal). -before and after bed (catalytic). •At least hourly measurement using flow indicator of vent stream flow to incinerator. <p>Monitor Accuracy:</p> <ul style="list-style-type: none"> •Temperature: Greater of ±1% or ±0.5°C. •Flow: Location specifications. <ul style="list-style-type: none"> •Any 3-hr period in which temperature >28°C below baseline (thermal and pre-bed temperature monitor for catalytic). •Any period in which temperature difference across catalytic bed <80% of baseline. <p>Boiler/Process Heater Units:</p> <ul style="list-style-type: none"> •Continuous monitoring and recording of temperature in firebox •Monitoring and recording of periods of operation (if boiler process heater ≥44 MW heat input capacity). •At least hourly measurement using flow indicator of vent stream flow to boiler/process heater. <p>Monitor Accuracy:</p> <ul style="list-style-type: none"> •Temperature: Greater of ±1% or ±0.5°C. •Boiler/process heater records of operation readily available for inspection. •Flow indicator: Location specifications. •Any 3-hr period in which temperature >28°C below baseline. •Boilers/Process Heaters: Change in location of where vent stream introduced into flame zone.
Performance Testing (PT) Test Method When Conducted	<ul style="list-style-type: none"> •RM's 1, 2 (2A, 2C, 2D), 3 and 18, as applicable. •Initial, except waived if boiler/process heater ≥44 MW heat input capacity.
Specific Reporting	<ul style="list-style-type: none"> •PT data and results. •Semiannual reports of exceedance, including periods when vent stream diverted from controls or when no flow rate, and any periods in which an applicable boiler or process heater not operating.
Specific Recordkeeping	<ul style="list-style-type: none"> •Detailed requirements similar to data required for reporting.
Emission Unit(s)	<ul style="list-style-type: none"> •Distillation units not discharging vent stream into recovery system. •Combinations of distillation unit(s) and recovery system into which its vent stream(s) is discharged.
Pollutant(s)	VOC
Emission Standard/Avg Time	Combust emissions in a flare meeting §60.18/None.
Monitoring System/Procedure	<ul style="list-style-type: none"> •Heat sensing device, such as a thermocouple or ultra-violet beam sensor at pilot

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

Subpart NNN: VOC Emissions for SOCOMI Distillation Operations				
PS/QA Exceedance Level	light to indicate continuous presence of flame. •At least hourly measurement using flow indicator of vent stream flow to flare. •Flow indicator: Location specifications. •None.			
Performance Testing (PT) Test Method	•§60.18 requirements apply: - RM 22 for VE. - Procedures for determining net heating value (RM 18 and ASTM Methods). - Exit velocity using RM 2 (or 2A, 2C, 2D). •Initial.			
When Conducted				
Specific Reporting	•PT data and results •Semiannual report of periods when pilot flame absent and when vent stream diverted from flare or has no flow rate.			
Specific Recordkeeping	•Detailed requirements similar to data required for reporting. •Includes all data records from pilot flame monitor.			
Emission Unit(s)	•Distillation units not discharging vent stream into recovery system. •Combinations of distillation unit(s) and recovery system into which its vent control stream(s) is discharged.			
Pollutant(s)	VOC			
Emission Standard/Avg Time	Maintain TRE index value greater than 1.0 without use of VOC emission control devices/Not specified.			
Monitoring System/Procedure PS/QA	Absorber Units: •Continuous monitoring and recording of: -Scrubbing liquid temperature. -Specific gravity. •Monitor accuracy: -Temperature: Greater of $\pm 1\%$ or $\pm 0.5^\circ\text{C}$. -Specific Gravity: ± 0.02 units.	Condenser Units •Continuous monitoring and recording of: -Temperature. •Monitor accuracy: -Temperature: Greater of $\pm 1\%$ or $\pm 0.5^\circ\text{C}$.	Carbon Adsorber Units: •Continuous monitoring and recording of: -Steam flow. -Carbon bed temperature. •Monitor accuracy: Steam flow: $\pm 10\%$. -Temperature: Greater of $\pm 1\%$ or $\pm 0.5^\circ\text{C}$.	Alternative for any Recovery Device: •VOC CEMS at exit. •None.
Exceedance Level	•Any 3-hr period in which temperature $>11^\circ\text{C}$ above baseline. •Any 3-hr period in which specific gravity $>\pm 0.1$ unit from baseline.	•Any 3-hr period in which temperature $>6^\circ\text{C}$ below baseline.	•Any period in which mass steam flow for regeneration cycle $>10\%$ below baseline. •Any 3-hr period in which temperature	•Any 3-hr period in which concentration level $>20\%$ above baseline.

Ciba Corporation
 Permit #: 860-AR-3
 AFIN #: 18-00081

Subpart NNN: VOC Emissions for SOCFI Distillation Operations				
			>28°C below baseline.	
Performance Testing (PT) Test Method	<ul style="list-style-type: none"> •Determine net heating value of gas combusted and calculate TRE using specified calculations and RM's 1 (1A), 2 (2A, 2C, 2D), 4 and 18 and other procedures, as applicable. 			
When Conducted	Initial and whenever process changes conducted.			
Specific Reporting	<ul style="list-style-type: none"> •PT data and results •Semiannual report of exceedance and any recalculation of TRE index. 			
Specific Recordkeeping	<ul style="list-style-type: none"> •Detailed requirements similar to data required for semiannual reports. 			

30. The Cationic Monomer Plant (SN-P4-1) shall fully comply with all applicable requirements of NSPS Subpart RRR - Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.

In keeping with the exemption provided by 60.700(c)(5), the facility is only required to comply with 60.705(r). The permittee must submit a process design description as part of the initial report which must be retained for the life of the process. [§19.304 of Regulation 19 and 40 CFR Part 60 Subpart RRR]

31. The permittee shall perform an annual audit to determine the number of valves, pumps, relief valves, flanges, and compressors at the P4 unit. The audit shall identify the number of valves, pumps, relief valves, flanges, and compressors as being part of these units. The numbers resulting from this audit shall be used to calculate emissions at SN-P4-4. A copy of the results of this audit and accompanying annual calculations shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
32. The permittee shall maintain records of hourly VOC emissions within the P4 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly VOC total divided by the monthly operating hours shall be compared to the hourly VOC emission rate in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
33. The permittee shall maintain records of hourly HAP emissions within the P4 Process Building area and associated storage tanks on a monthly basis. For compliance purposes, the monthly HAP total divided by the monthly operating hours shall be compared to the hourly emission rate for that pollutant in Specific Condition 2. The records and calculations shall be kept on site and made available to Department personnel upon request. [§18.1004 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Non-Stack Sources

34. The permittee shall maintain monthly records of VOC emissions at FS-1. These records must be kept on site and made available to Department personnel upon request.

Compliance shall be based upon a 12-month rolling total. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311,

35. The permittee shall maintain monthly records of HAP emissions at FS-1. These records must be kept on site and made available to Department personnel upon request. Compliance shall be based upon a 12-month rolling total. [§18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311,
36. The permittee shall perform an annual audit to determine the number of valves, pumps, relief valves, flanges, and compressors at the P1, P2, and P3 units. The audit shall identify the number of valves, pumps, relief valves, flanges, and compressors as being part of these units. The numbers resulting from this audit shall be used to calculate emissions of FS-2. A copy of the results of this audit and accompanying annual calculations shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
37. The permittee shall perform an annual evaluation of VOC, HAP, and acetone emissions from the wastewater treatment operations at SN-FS-3. The evaluation shall be based upon data from sampling of these pollutants in the wastewater, estimations from the TANKS program, WATER9 or similar wastewater treatment modeling software. The permittee, if necessary to correct permitted emissions, shall submit an application to modify their minor source permit within 30 days of the assessment. [§18.1004 of Regulation 18, §19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Miscellaneous Sources Section

38. The permittee shall not operate the Lab Emergency Electrical Generator (SN-MI-1) more than 200 hours per rolling 12-month period for testing and maintenance purposes. Records of testing/maintenance operation time shall be maintained on site, updated on a per-event basis, and made available to Department personnel upon request. Operation time required for actual emergency use is not restricted by this permit. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
39. The permittee shall be limited to 2 hours per week and 100 hours per year of diesel generator testing and maintenance operating time, each for SN-MI-2, SN-MI-3, and SN-MI-4, except that a 4-hour testing and maintenance event may be conducted once per year. Records of generator use for testing/maintenance shall be maintained on site, updated on a per-event basis, and made available to Department personnel upon request. Operation time required for actual emergency use is not restricted by this permit. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
40. The permittee shall not operate the Electrical Generator (SN-MI-5) more than 100 hours per rolling 12-month period for testing and maintenance purposes. Records of testing/maintenance operation time shall be maintained on site, updated on a per-event basis, and made available to Department personnel upon request. Operation time required for actual emergency use is not restricted by this permit. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

41. The permittee shall maintain a copy of the manufacturer's specification sheet for the Lab Emergency Electrical Generator (SN-MI-1), Emergency Electrical Generator (SN-MI-2), the Fire Protection Generator (SN-MI-3), the Electrical Generator (SN-MI-4), and Electrical Generator (SN-MI-5). This information shall be kept on site and made available to Department personnel upon request. [§19.705 of Regulation 19, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Plantwide Conditions

42. The permittee will implement a Leak Detection and Repair (LDAR) Program at the facility. The LDAR procedure and inspection logs will be kept on site at all times and will be made available to Department personnel upon request. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
43. The permittee is limited to the following VOC, HAP, and acetone 12-month rolling total limits from the P1, P2, P3, and P4 sources. [§18.801 et seq of Regulation 18, §19.501 et seq of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Pollutant	12-month rolling limit
VOC	54.9
Acetone	1.7
Acrylamide ^{HAP}	0.02
Acrylic Acid ^{HAP}	0.42
Allyl Chloride ^{HAP}	0.30
Epichlorohydrin ^{HAP}	0.04
Methanol ^{HAP}	2.23
Methyl Methacrylate ^{HAP}	3.94
Methyl Chloride ^{HAP}	4.60

44. The permittee shall maintain records of VOC emissions at the P1, P2, P3, and P4 source groups on a monthly basis. These records must be kept on site and made available to Department personnel upon request. Compliance shall be based upon a 12-month rolling total. Calculations shall be based on boiler fuel usage, diesel combustion, reactor kinetic equations, estimations from the TANKS program, and fugitive emissions caused by unloading and equipment leaks. The calculated value shall be compared to the limit contained within Specific Condition 43 for compliance purposes. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

45. The permittee shall maintain records of HAP and acetone emissions at the P1, P2, P3, and P4 source groups on a monthly basis. These records must be kept on site and made available to Department personnel upon request. Compliance shall be based upon a 12-month rolling total. Calculations shall be based on boiler fuel usage, diesel combustion, reactor kinetic equations, estimations from the TANKS program, and fugitive emissions caused by unloading and equipment leaks. The calculated value shall be compared to the limit contained within Specific Condition 43 for compliance purposes. [§18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
46. The permittee may maintain their compliance logs in a spreadsheet, database, or other well organized format. [§19.705 of Regulation 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]
47. The permittee shall be responsible for complying with all applicable requirements of NSPS-Kb at any tank at the facility if a volatile organic liquid meeting the vapor pressure and quantity thresholds outlined in NSPS-Kb is stored in the tank. These vapor pressure and quantity thresholds are presented in the following NSPS Kb Summary of Requirements for reference. [§19.304 of Regulation 19 and 40 CFR Part 60 Subpart Kb]

Vessel Capacity (gallons)	VOL Pressure Limit	Required Control Device	Summary of Testing & Procedures	Recordkeeping & Reporting	Monitoring of Operations
>=19,813 but <39,889 60.116(b)(c)	>=2.18 psia but < 4.00 psia	None	None	None	Items A, B, C, & D
>=19,813 but <39,889	>=2.18 psia	None	None	None	Items A & B
>=19,813 but <39,890 60.112b(a)	>= 4.00 psia but < 11.11 psia	IFR, EFR, or Closed Vent System, or EPA Alternative	See Below	See Below	Items A, B, & C
>=19,813 60.112(b)(b)	>= 11.11 psia	Closed Vent System or EPA Alternative	See Below	See Below	Items A & B
>=39,890 60.116(b)(c)	>=0.5 psia	None	None	None	Items A & B
>=39,890	>=0.5 psia but < 0.75 psia	None	None	None	Items A, B, C, & D
>=39,890 60.112b(a)	>= 0.75 psia but <11.11 psia	IFR, EFR, or Closed Vent System, or EPA Alternative	See Below	See Below	Items A, B, & C

DESCRIPTION OF CONTROL DEVICE

IFR: Internal Floating Roof, in conjunction with a fixed roof. The IFR is equipped with a liquid-mounted or mechanical shoe primary seal, either flexible fabric sleeve seals on pipe columns or gasketed sliding covers on built-up or pipe columns, slit fabric membranes or sample wells, and gasketed covers on roof fittings.

EFR: External Floating Roof, equipped with mechanical shoe primary seals and a continuous rim-mounted secondary seal, with both seals meeting certain minimum gap requirements, and gasketed covers on roof fittings.

Ciba Specialty Chemicals Corporation
Permit #: 860-AR-R3
AFIN #: 18-00081

Closed Vent System and Control Device: 95% effective control device

Alternative means of emission limitation: May be approved by EPA after notice and an opportunity for public hearing.

SUMMARY OF TESTING AND PROCEDURES

Closed Vent System: Submit a design specification and operation and maintenance plan, which specifies maintenance, and operating practices.

Alternate Means Approved by EPA: Specified by EPA when approved.

External Floating Roof: Inspect seals prior to filling. Also, gap measurements between the seal and vessel wall are required to ensure equipment is properly maintained and operated. Gap measurement of primary and secondary seals are required within 60 days of introducing liquid to the vessel. Every 12 months, secondary gap measurements must be conducted. Every five years, primary seal gap measurements must be conducted. Measured gaps that exceed limitations must be repaired within 45 days, or the vessel must be emptied. Notify EPA 30 days prior to gap measurements being conducted and also prior to filling and refilling of vessel.

Fixed Roof with IFR: Required to inspect to ensure that equipment is maintained and properly operated. Floating roof and seals are to be inspected prior to filling the vessel to ensure there are no holes in the IFR and that there are no holes, tears, or other openings in the seal from the fixed roof. If there are holes in the IFR or if liquid has accumulated on the roof, then repairs can be made within 45 days or the vessel can be emptied within 45 days. Every ten years, the vessel must be emptied to inspect the IFR and primary and secondary seals. All defects must be repaired before the vessel is refilled. Notify EPA 30 days prior to filling and refilling the vessel.

SUMMARY OF MONITORING OPERATIONS

Item A: Requirement to keep copies of all records required by Items C and D for two years. The record required by Item B is to be kept for the life of the source.

Item B: Record showing the dimension of the storage vessel and an analysis showing the capacity of the vessel.

Item C: Maintain a record of the VOL stored, the period of storage and the maximum true vapor pressure of that VOL during the respective storage period. Vessels with closed vent systems and control device are exempt.

Item D: Notify EPA within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. Vessels with Closed Vent System and Control Device are EXEMPT.

AFFECTED FACILITY DEFINED

The affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 19,813 gallons that is used to store volatile organic liquids (VOLs) for which construction, reconstruction, or modification is commenced after July 23, 1984.

EXCEPTIONS

1. Vessels at coke oven by-product plants.
2. Pressure vessels designed to operate in excess of 204.9 kPA (29.69 psia) and without emissions to the atmosphere.
3. Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.
4. Vessels with a design capacity less than or equal to 420,000 gal. Used for petroleum or condensate stored, processed, or treated prior to custody transfer.
5. Vessels located at bulk gasoline plants.
6. Storage vessels located at gasoline service stations.
7. Vessels used to store beverage alcohol.

Ciba Specialty Chemicals Corporation
Permit #: 860-AR-R3
AFIN #: 18-00081

Section V: INSIGNIFICANT ACTIVITIES

The Department deems the following types of activities or emissions as insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in Regulation 18 and 19 Appendix A. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated July 2007.

Description	Category
Final Product Drumming and Shipping	A-13
P3 Acetone Boilouts	A-13
Wastewater Sludge Dewatering	A-13
Quat Scrubber and Feed Tank Charge	A-13

Section VI: GENERAL CONDITIONS

1. Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.). Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 et seq.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.
2. This permit does not relieve the owner or operator of the equipment and/or the facility from compliance with all applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated under the Act. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
3. The permittee shall notify the Department in writing within thirty (30) days after commencement of construction, completion of construction, first operation of equipment and/or facility, and first attainment of the equipment and/or facility target production rate. [Regulation 19, §19.704 and/or A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
4. Construction or modification must commence within eighteen (18) months from the date of permit issuance. [Regulation 19, §19.410(B) and/or Regulation 18, §18.309(B) and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
5. The permittee must keep records for five years to enable the Department to determine compliance with the terms of this permit such as hours of operation, throughput, upset conditions, and continuous monitoring data. The Department may use the records, at the discretion of the Department, to determine compliance with the conditions of the permit. [Regulation 19, §19.705 and/or Regulation 18, §18.1004 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
6. A responsible official must certify any reports required by any condition contained in this permit and submit any reports to the Department at the address below. [Regulation 19, §19.705 and/or Regulation 18, §18.1004 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Arkansas Department of Environmental Quality
Air Division
ATTN: Compliance Inspector Supervisor

Ciba Specialty Chemicals Corporation
Permit #: 860-AR-R3
AFIN #: 18-00081

5301 Northshore Drive
North Little Rock, AR 72118-5317

7. The permittee shall test any equipment scheduled for testing, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) newly constructed or modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start up of the permitted source or (2) existing equipment already operating according to the time frames set forth by the Department. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. The permittee must submit compliance test results to the Department within thirty (30) days after the completion of testing. [Regulation 19, §19.702 and/or Regulation 18, §18.1002 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
8. The permittee shall provide: [Regulation 19, §19.702 and/or Regulation 18, §18.1002 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - a. Sampling ports adequate for applicable test methods;
 - b. Safe sampling platforms;
 - c. Safe access to sampling platforms; and
 - d. Utilities for sampling and testing equipment
9. The permittee shall operate equipment, control apparatus and emission monitoring equipment within their design limitations. The permittee shall maintain in good condition at all times equipment, control apparatus and emission monitoring equipment. [Regulation 19, §19.303 and/or Regulation 18, §18.1104 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
10. If the permittee exceeds an emission limit established by this permit, the permittee will be deemed in violation of said permit and will be subject to enforcement action. The Department may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met: [Regulation 19, §19.601 and/or Regulation 18, §18.1101 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - a. The permittee demonstrates to the satisfaction of the Department that the emissions resulted from an equipment malfunction or upset and are not the result of negligence or improper maintenance, and the permittee took all reasonable measures to immediately minimize or eliminate the excess emissions.
 - b. The permittee reports the occurrence or upset or breakdown of equipment (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence.
 - c. The permittee must submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and

nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, the information need not be submitted again.

11. The permittee shall allow representatives of the Department upon the presentation of credentials: [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
 - a. To enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy any records required to be kept under the terms and conditions of this permit, or the Act;
 - c. To inspect any monitoring equipment or monitoring method required in this permit;
 - d. To sample any emission of pollutants; and
 - e. To perform an operation and maintenance inspection of the permitted source.
12. The Department issued this permit in reliance upon the statements and presentations made in the permit application. The Department has no responsibility for the adequacy or proper functioning of the equipment or control apparatus. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
13. The Department may revoke or modify this permit when, in the judgment of the Department, such revocation or modification is necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated the Arkansas Water and Air Pollution Control Act. [Regulation 19, §19.410(A) and/or Regulation 18, §18.309(A) and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
14. This permit may be transferred. An applicant for a transfer must submit a written request for transfer of the permit on a form provided by the Department and submit the disclosure statement required by Arkansas Code Annotated §8-1-106 at least thirty (30) days in advance of the proposed transfer date. The permit will be automatically transferred to the new permittee unless the Department denies the request to transfer within thirty (30) days of the receipt of the disclosure statement. The Department may deny a transfer on the basis of the information revealed in the disclosure statement or other investigation or, deliberate falsification or omission of relevant information. [Regulation 19, §19.407(B) and/or Regulation 18, §18.307(B) and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
15. This permit shall be available for inspection on the premises where the control apparatus is located. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Ciba Specialty Chemicals Corporation
Permit #: 860-AR-R3
AFIN #: 18-00081

16. This permit authorizes only those pollutant emitting activities addressed herein. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
17. This permit supersedes and voids all previously issued air permits for this facility. [Regulation 18 and 19 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]
18. The permittee must pay all permit fees in accordance with the procedures established in Regulation No. 9. [A.C.A §8-1-105(c)]
19. The permittee may request in writing and at least 15 days in advance of the deadline, an extension to any testing, compliance or other dates in this permit. No such extensions are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion in the following circumstances:
 - a. Such an extension does not violate a federal requirement;
 - b. The permittee demonstrates the need for the extension; and
 - c. The permittee documents that all reasonable measures have been taken to meet the current deadline and documents reasons it cannot be met.

[Regulation 18, §18.102(C-D), Regulation 19, §19.103(D), A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and CFR Part 52, Subpart E]

20. The permittee may request in writing and at least 30 days in advance, temporary emissions and/or testing that would otherwise exceed an emission rate, throughput requirement, or other limit in this permit. No such activities are authorized until the permittee receives written Department approval. Any such emissions shall be included in the facilities total emissions and reported as such. The Department may grant such a request, at its discretion under the following conditions:
 - a. Such a request does not violate a federal requirement;
 - b. Such a request is temporary in nature;
 - c. Such a request will not result in a condition of air pollution;
 - d. The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date/time such emission will occur;
 - e. Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
 - f. The permittee maintains records of the dates and results of such temporary emissions/testing.

[Regulation 18, §18.102(C-D), Regulation 19, §19.103(D), A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and CFR Part 52, Subpart E]

Ciba Specialty Chemicals Corporation
Permit #: 860-AR-R3
AFIN #: 18-00081

21. The permittee may request in writing and at least 30 days in advance, an alternative to the specified monitoring in this permit. No such alternatives are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion under the following conditions:
 - a. The request does not violate a federal requirement;
 - b. The request provides an equivalent or greater degree of actual monitoring to the current requirements; and
 - c. Any such request, if approved, is incorporated in the next permit modification application by the permittee.

[Regulation 18, §18.102(C-D), Regulation 19, §19.103(D), A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and CFR Part 52, Subpart E]

CERTIFICATE OF SERVICE

I, Pam Owen, hereby certify that a copy of this permit has been mailed by first class mail to Ciba
Speciality Chemicals Corporation, 100 Bridgeport Road Industrial Park, West Memphis, AR,
72301, on this 15th day of December, 2008.



Pam Owen, AAI, Air Division

