



- iii. This permit is issued based upon the plant not being subject to the requirements of 35 Ill. Adm. Code Part 218 Subpart RR, Miscellaneous Organic Chemical Manufacturing Processes. This is consequence of the federally enforceable production and operating limitations, which restrict a potential to emit to less than 25 tons per year.
  - b. Prior to initial issuance, a draft of this permit has undergone a public notice and comment period.
  - c. This permit supersedes all operating permits issued for this location.
- 2a. The two boilers are subject to New Source Performance Standards (NSPS) for Small Industrial - Commercial - Institutional Steam Generating Units, 40 CFR 60, Subparts A and Dc. The Illinois EPA is administering the NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
- b. The Permittee shall fulfill applicable notification and recordkeeping requirements of NSPS, 40 CFR 60.7 and 60.48c.
  - c. Pursuant to 40 CFR 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
3. Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm, corrected to 50 percent excess air.
- 4a. Pursuant to 35 Ill. Adm. Code 218.122(a), no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading facility having through-put of greater than 151 cubic meters per day (40,000 gallons/day) into any railroad tank car, tank truck or trailer unless such loading facility is equipped with submerged loading pipes, submerged fill, or a device that is equally effective in controlling emissions and is approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201.
- b. Pursuant to 35 Ill. Adm. Code 218.122(b), no person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 l (250 gallons), unless

such tank is equipped with a permanent submerged loading pipe, submerged fill, or an equivalent device approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201 or unless such tank is a pressure tank as described in Section 218.121(a) or is fitted with a recovery system as described in 35 Ill. Adm. Code 218.121(b)(2).

- c. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission source, except as provided in 35 Ill. Adm. Code 218.302, 218.303, 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G: Use of Organic Material, shall apply only to photochemically reactive material.
- d. Pursuant to 35 Ill. Adm. Code 218.302(b), emissions of organic material in excess of those permitted by 35 Ill. Adm. Code 218.301 are allowable if such emissions are controlled by a vapor recovery system which adsorbs and/or condenses at least 85 percent of the total uncontrolled organic material that would otherwise be emitted to the atmosphere.
- 5. The 20,000 gallon outdoor blending surfactant storage tanks (S18-S21) are not subject to the the NSPS for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, 40 CFR 60 Subpart Kb. Pursuant to 40 CFR 60.110b(b), 40 CFR 60 Subpart Kb does not apply to storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 15.0 kPa.
- 6a. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.
- b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the scrubber associated with reactors R25 and R28-R30 such that the scrubber is kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.
- c. This permit is issued based on the use of only natural gas in the boilers at this source. The use of any other fuel in the boilers requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- 7a. Emissions and operation of the two boilers (combined) shall not exceed the following limits:

i. Fuel usage:

Natural Gas Usage	
<u>(mmscf/Month)</u>	<u>(mmscf*/Year)</u>
38	229

\* 1 mmscf = 10,200 therms

ii. Combustion emissions:

<u>Pollutant</u>	Emission Factor	Emissions	
	<u>(lbs/mmscf)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Nitrogen Oxides (NO <sub>x</sub> )	100	1.91	11.45
Carbon Monoxide (CO)	84	1.60	9.62
Particulate Matter (PM)	7.6	0.15	0.87
Volatile Organic Material (VOM)	5.5	0.11	0.63

These limits are based on the combined maximum firing rate (26.63 mmBtu/hour), maximum operating time (8,760 hours/year), and standard AP-42 emission factors.

b. Emissions and operation of the twenty-five reactors (including three new reactors), when manufacturing methanol generating products shall not exceed the following limits:

i. Production rates:

	Total Production	
	<u>(Ton/mo)</u>	<u>(Ton/yr)</u>
All Products	738	7,375

ii. Emissions of VOM and HAPs:

<u>Product Type</u>	Emission Factor		Emissions			
	<u>(lb/T)</u>	<u>(lb/T)</u>	<u>(Ton/mo)</u>	<u>(Ton/yr)</u>	<u>(Ton/mo)</u>	<u>(Ton/yr)</u>
Amides	1.292	1.009	--	--	--	--
Amidoamines	2.290	0.944	--	--	--	--
Imidazolines	1.799	0.885	--	--	--	--
		Totals	0.65	6.46	0.36	3.52

These limits are based on maximum production and emission factors developed through the use of the Emission Master software.

c. Emissions and operation of the twenty-five reactors (including three new reactors), when manufacturing non-methanol generating products shall not exceed the following limits:

i. Production rates:

	Total Production	
	<u>Ton/mo</u>	<u>Ton/yr</u>
All Products	3,001	30,010

ii. Emissions of VOM and HAPs:

<u>Product Type</u>	<u>Emission Factor (lbs/Ton)</u>	<u>VOM Emissions</u>	
		<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Amides	0.283	--	--
Amidoamines	1.346	--	--
Imidazolines	0.914	--	--
	Totals	1.17	11.62

These limits are based on maximum production and emission factors developed through the use of the Emission Master software.

- d. Working and storage loss emissions from and all indoor and outdoor tanks (combined) shall not exceed 0.3 tons/month and 2.34 tons/year of VOM and 0.08 tons/month and 0.76 tons/year of methanol. These limits are based on the maximum raw material consumption, specified in Attachment B.
- e. Filling loss emissions from all containers (combined) shall not exceed 0.3 tons/month and 3.10 tons/year of VOM and 0.15 tons/month and 1.48 tons/year of methanol. These limits are based on the maximum raw material consumption, specified in Attachment B.
- f. Emissions and operation of the flaker shall not exceed 0.4 tons/month and 3.72 tons/year of PM. These limits are based on the maximum raw material consumption, specified in Attachment B.
- g. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act from this source shall not exceed 0.79 tons/month and 7.9 tons/year of any single HAP and 1.99 tons/month and 19.9 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA and the requirements of Section 112(g) of the Clean Air Act.
- h. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 9. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f)

of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.

10. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 Ill. Adm. Code Part 218 other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.
- 11a. The Permittee shall maintain records of the following items to demonstrate compliance with the Conditions of this permit:
  - i. Records addressing use of good operating practices for the scrubber associated with reactors R25 and R28-R30:
    - A. Records for periodic inspection of the scrubber associated with reactors R25 and R28-R30 with date, individual performing the inspection, and nature of inspection; and
    - B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
  - ii. Methanol generating amide production (tons/month, tons/year);

- iii. Methanol generating amidoamine production (tons/month, tons/year);
  - iv. Methanol generating imidazoline production (tons/month, tons/year);
  - v. Non-methanol generating amide production (tons/month, tons/year);
  - vi. Non-methanol generating amidoamine production (tons/month, tons/year);
  - vii. Non-methanol generating imidazoline production (tons/month, tons/year);
  - viii. Usage of each raw material in Attachment B (tons/month, tons/year);
  - ix. Boiler natural gas usage (mmscf/month, mmscf/year); and
  - x. Monthly and annual emissions of CO, NO<sub>x</sub>, PM, PM<sub>10</sub>, VOM and HAPs with supporting calculations (tons/month and tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
11. If there is an exceedance of or deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
12. Pursuant to 35 Ill. Adm. Code 218.990, upon request by the Illinois EPA, the owner or operator of an emission unit which is exempt from the requirements of 35 Ill. Adm. Code 218 Subparts PP, QQ, RR, TT or 35 Ill. Adm. Code 218.208(b) shall submit records to the Illinois EPA within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.
13. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 West Harrison  
Des Plaines, Illinois 60016

It should be noted that this permit has been revised so as to incorporate the operation of the equipment described in construction permit number 08050002.

If you have any questions on this, please call Jocelyn Stakely at 217/782-2113.

Edwin C. Bakowski, P.E.  
Acting Manager, Permit Section  
Division of Air Pollution Control

Date Signed: \_\_\_\_\_

ECB:JRS:jws

cc: Illinois EPA, FOS Region 1  
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from this organic chemical products manufacturing facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels at which this source would be considered a major source for purposes of the Clean Air Act Permit Program (e.g., 25 tons per of VOM, 10 tons per year for a single HAP, and 25 tons per year for combined HAPs). Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	E M I S S I O N S (Tons/Year)						<u>Single HAP*</u>	<u>Total HAPs</u>
	<u>CO</u>	<u>NO<sub>x</sub></u>	<u>PM</u>	<u>SO<sub>2</sub></u>	<u>VOM</u>			
Boilers	9.62	11.45	0.87	--	0.63			
Reactors					18.08	3.52		
Tanks								
Indoor					1.68	0.34	2.33	
Outdoor					0.65	0.43		
Containers					3.09	1.47		
Flaker			<u>3.72</u>					
Totals	<u>9.62</u>	<u>11.45</u>	<u>4.59</u>	-----	<u>24.13</u>	<u>5.76</u>	<u>&lt; 25</u>	

\* methanol

ECB:JRS:jws

Attachment B - Raw Material Consumption Limits

This attachment lists the usage limits which must be observed to ensure the facility-wide emissions limits of this permit are not exceeded.

<u>Material</u>	<u>(Tons/Month)</u>	<u>(Tons/year)</u>
Amphoteric surfactants with methanol	1,525	15,250
Alkyl sulfates with alcohol	613	6,125
Cosmetic preservatives	750	7,500
Wetting agents	1,750	17,500
Surfactants and intermediates	10,000	100,000
Aminoethylethanolamine	175	1,750
Diethanolamine	400	4,000
2-ethyl hexanol	50	500
Ethylene glycol	50	500
Methanol (fresh and recovered)	375	3,750
DMAPA fresh and recovered	750	7,500
Methyl acrylate	50	500
Acrylic acid	60	600
Epichlorohydrin	300	3,000
Wastewater (0.4% methanol)	4,170	41,700
Methanol and other HAP/VOM (container filling only)	500	5,000
Ethanol	50	500
Mono Chloroacetic Acid	750	7,500

ECB:JRS:jws