

*mile*  
*13-1823J*  
*107-00001*

# **Washington Works**

## **Class II Administrative Update Permit Application for R13-1823J**

**PUBLIC VERSION**

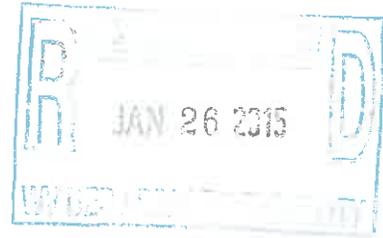
**Submitted January 23, 2015**



E. I. du Pont de Nemours and Company  
Washington Works  
Mail: P.O. Box 1217  
Washington, WV 26181-1217

January 23, 2015

**CERTIFIED MAIL – 7013 3020 0000 3729 8621**  
**RETURN RECEIPT REQUESTED**



Mr. William F. Durham, Director  
Division of Air Quality  
WV Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304-2345

**Modification to Permit R13-1823J – Area T2 – TFE Refining and HCl Production**

Dear Mr. Durham:

Attached you will find the application forms for a Class II Administrative update for R13-1823J. This update is the result of a project to construct and operate two new hydrochloric acid storage tanks at the Monomer production unit at the DuPont Washington Works Facility. Air pollutant emissions from the proposed tanks will be exhausted to an existing water scrubber, with a minor increase in pollutants to the atmosphere.

We have also included the Attachment S form to allow inclusion of the changes into the Title V permit for Segment 2 of 14 Fluoropolymer Manufacturing.

If you have questions or concerns with this permit application please contact Mr. David F. Altman by telephone at (304) 863-4271 or Mr. John J. Mentink by telephone at (304) 863-2028 or by email at [john.j.mentink@usa.dupont.com](mailto:john.j.mentink@usa.dupont.com).

Very truly yours,

David F. Altman  
Sr. Environmental Control Consultant  
DuPont Washington Works

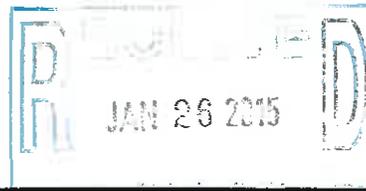
Enclosures  
DFA:jjm/slb

CC: Ms. Carrie McCumbers  
Division of Air Quality  
WV Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304-2345

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 <p>WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION <b>DIVISION OF AIR QUALITY</b> 601 57<sup>th</sup> Street, SE Charleston, WV 25304 (304) 926-0475 <a href="http://www.dep.wv.gov/daq">www.dep.wv.gov/daq</a></p>	<p><b>APPLICATION FOR NSR PERMIT</b> <b>AND</b> <b>TITLE V PERMIT REVISION</b> <b>(OPTIONAL)</b></p>
<p>PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):</p> <p><input type="checkbox"/> CONSTRUCTION    <input type="checkbox"/> MODIFICATION    <input type="checkbox"/> RELOCATION <input type="checkbox"/> CLASS I ADMINISTRATIVE UPDATE    <input type="checkbox"/> TEMPORARY <input checked="" type="checkbox"/> CLASS II ADMINISTRATIVE UPDATE    <input type="checkbox"/> AFTER-THE-FACT</p>	<p>PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):</p> <p><input type="checkbox"/> ADMINISTRATIVE AMENDMENT    <input checked="" type="checkbox"/> MINOR MODIFICATION <input type="checkbox"/> SIGNIFICANT MODIFICATION</p> <p>IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION</p>
<p><i>FOR TITLE V FACILITIES ONLY Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.</i></p>	
<p><b>Section I. General</b></p>	
<p>1. Name of applicant (as registered with the WV Secretary of State's Office): E. I. du Pont de Nemours and Company</p>	<p>2. Federal Employer ID No. (FEIN): 510014090</p>
<p>3. Name of facility (if different from above): DuPont Washington Works</p>	<p>4. The applicant is the: <input type="checkbox"/> OWNER    <input type="checkbox"/> OPERATOR    <input checked="" type="checkbox"/> BOTH</p>
<p>5A. Applicant's mailing address: P.O. Box 1217 Washington WV, 26181-1217</p>	<p>5B. Facility's present physical address: 8480 DuPont Road Washington, WV 26181</p>
<p>6. <b>West Virginia Business Registration.</b> Is the applicant a resident of the State of West Virginia?    <input checked="" type="checkbox"/> YES    <input type="checkbox"/> NO</p> <p>– If YES, provide a copy of the <b>Certificate of Incorporation/Organization/Limited Partnership</b> (one page) including any name change amendments or other Business Registration Certificate as <b>Attachment A</b>.</p> <p>– If NO, provide a copy of the <b>Certificate of Authority/Authority of L.L.C./Registration</b> (one page) including any name change amendments or other Business Certificate as <b>Attachment A</b>.</p>	
<p>7. If applicant is a subsidiary corporation, please provide the name of parent corporation:</p>	
<p>8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i>?    <input checked="" type="checkbox"/> YES    <input type="checkbox"/> NO</p> <p>– If YES, please explain:    Owns site</p> <p>– If NO, you are not eligible for a permit for this source.</p>	
<p>9. Type of plant or facility (stationary source) to be <b>constructed, modified, relocated, administratively updated</b> or <b>temporarily permitted</b> (e.g., coal preparation plant, primary crusher, etc.): Chemical Manufacturing</p>	<p>10. North American Industry Classification System (NAICS) code for the facility: 325199</p>
<p>11A. DAQ Plant ID No. (for existing facilities only): 107-00001</p>	<p>11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R13-1823I, R13-2617F, R13-3223, R30-107-00001 Segment 2 of 14</p>
<p><i>All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.</i></p>	

<p>12A.</p> <ul style="list-style-type: none"> <li>For <b>Modifications, Administrative Updates</b> or <b>Temporary permits</b> at an existing facility, please provide directions to the <i>present location</i> of the facility from the nearest state road;</li> <li>For <b>Construction</b> or <b>Relocation permits</b>, please provide directions to the <i>proposed new site location</i> from the nearest state road. Include a <b>MAP</b> as <b>Attachment B</b>.</li> </ul> <p>Take the Route 50 bypass towards Ohio from I-77. Exit the Route 50 bypass at the last exit in West Virginia. At the light turn left and continue on DuPont road for approximately ½ - ¾ mile. The main plant entrance will be visible on your right.</p>		
12.B. New site address (if applicable): N/A	12C. Nearest city or town: Parkersburg	12D. County: Wood
12.E. UTM Northing (KM): 4346.80705	12F. UTM Easting (KM): 441.79164	12G. UTM Zone: 17
<p>13. Briefly describe the proposed change(s) at the facility: This permit amendment is for the installation and operation of two additional hydrochloric acid tanks in the T2 area of the Fluoroproducts operation, where aqueous HCl is manufactured as a product.</p>		
<p>14A. Provide the date of anticipated installation or change: 05/01/2015</p> <ul style="list-style-type: none"> <li>If this is an <b>After-The-Fact</b> permit application, provide the date upon which the proposed change did happen:</li> </ul>		<p>14B. Date of anticipated Start-Up if a permit is granted: 07/31/2015</p>
<p>14C. Provide a <b>Schedule</b> of the planned <b>Installation of/Change</b> to and <b>Start-Up</b> of each of the units proposed in this permit application as <b>Attachment C</b> (if more than one unit is involved).</p>		
<p>15. Provide maximum projected <b>Operating Schedule</b> of activity/activities outlined in this application:</p> <p style="text-align: center;">Hours Per Day 24      Days Per Week 7      Weeks Per Year 52</p>		
<p>16. Is demolition or physical renovation at an existing facility involved?    <input type="checkbox"/> YES    <input checked="" type="checkbox"/> NO</p>		
<p>17. <b>Risk Management Plans.</b> If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see <a href="http://www.epa.gov/ceppo">www.epa.gov/ceppo</a>), submit your <b>Risk Management Plan (RMP)</b> to U. S. EPA Region III.</p>		
<p>18. <b>Regulatory Discussion.</b> List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (<i>if known</i>). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (<i>if known</i>). Provide this information as <b>Attachment D</b>.</p>		
<p><b>Section II. Additional attachments and supporting documents.</b></p>		
<p>19. Include a check payable to WVDEP – Division of Air Quality with the appropriate <b>application fee</b> (per 45CSR22 and 45CSR13).</p>		
<p>20. Include a <b>Table of Contents</b> as the first page of your application package.</p>		
<p>21. Provide a <b>Plot Plan</b>, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as <b>Attachment E</b> (Refer to <b>Plot Plan Guidance</b>).</p> <ul style="list-style-type: none"> <li>Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).</li> </ul>		
<p>22. Provide a <b>Detailed Process Flow Diagram(s)</b> showing each proposed or modified emissions unit, emission point and control device as <b>Attachment F</b>.</p>		
<p>23. Provide a <b>Process Description</b> as <b>Attachment G</b>.</p> <ul style="list-style-type: none"> <li>Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).</li> </ul>		
<p><i>All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.</i></p>		
<p>24. Provide <b>Material Safety Data Sheets (MSDS)</b> for all materials processed, used or produced as <b>Attachment H</b>.</p> <ul style="list-style-type: none"> <li>For chemical processes, provide a MSDS for each compound emitted to the air.</li> </ul>		
<p>25. Fill out the <b>Emission Units Table</b> and provide it as <b>Attachment I</b>.</p>		

26. Fill out the <b>Emission Points Data Summary Sheet (Table 1 and Table 2)</b> and provide it as <b>Attachment J</b> .
27. Fill out the <b>Fugitive Emissions Data Summary Sheet</b> and provide it as <b>Attachment K</b> .
28. Check all applicable <b>Emissions Unit Data Sheets</b> listed below: <input type="checkbox"/> Bulk Liquid Transfer Operations <input type="checkbox"/> Haul Road Emissions <input type="checkbox"/> Quarry <input type="checkbox"/> Chemical Processes <input type="checkbox"/> Hot Mix Asphalt Plant <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities <input type="checkbox"/> Concrete Batch Plant <input type="checkbox"/> Incinerator <input checked="" type="checkbox"/> Storage Tanks <input type="checkbox"/> Grey Iron and Steel Foundry <input type="checkbox"/> Indirect Heat Exchanger <input type="checkbox"/> General Emission Unit, specify
Fill out and provide the <b>Emissions Unit Data Sheet(s)</b> as <b>Attachment L</b> .
29. Check all applicable <b>Air Pollution Control Device Sheets</b> listed below: <input type="checkbox"/> Absorption Systems <input type="checkbox"/> Baghouse <input type="checkbox"/> Flare <input type="checkbox"/> Adsorption Systems <input type="checkbox"/> Condenser <input type="checkbox"/> Mechanical Collector <input type="checkbox"/> Afterburner <input type="checkbox"/> Electrostatic Precipitator <input checked="" type="checkbox"/> Wet Collecting System <input type="checkbox"/> Other Collectors, specify
Fill out and provide the <b>Air Pollution Control Device Sheet(s)</b> as <b>Attachment M</b> .
30. Provide all <b>Supporting Emissions Calculations</b> as <b>Attachment N</b> , or attach the calculations directly to the forms listed in Items 28 through 31.
31. <b>Monitoring, Recordkeeping, Reporting and Testing Plans.</b> Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as <b>Attachment O</b> . > Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.
32. <b>Public Notice.</b> At the time that the application is submitted, place a <b>Class I Legal Advertisement</b> in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and <b>Example Legal Advertisement</b> for details). Please submit the <b>Affidavit of Publication</b> as <b>Attachment P</b> immediately upon receipt.
33. <b>Business Confidentiality Claims.</b> Does this application include confidential information (per 45CSR31)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO > If YES, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's " <b>Precautionary Notice – Claims of Confidentiality</b> " guidance found in the <b>General Instructions</b> as <b>Attachment Q</b> .

### Section III. Certification of Information

34. <b>Authority/Delegation of Authority.</b> Only required when someone other than the responsible official signs the application. Check applicable <b>Authority Form</b> below: <input type="checkbox"/> Authority of Corporation or Other Business Entity <input type="checkbox"/> Authority of Partnership <input type="checkbox"/> Authority of Governmental Agency <input type="checkbox"/> Authority of Limited Partnership Submit completed and signed <b>Authority Form</b> as <b>Attachment R</b> . <i>All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.</i>
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**35A. Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

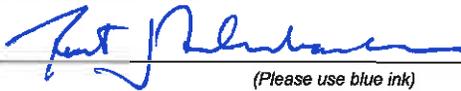
**Certification of Truth, Accuracy, and Completeness**

I, the undersigned  **Responsible Official** /  **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

**Compliance Certification**

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE

  
(Please use blue ink)

DATE:

Jan. 23, 2015  
(Please use blue ink)

35B. Printed name of signee: Robert J. Fehrenbacher

35C. Title: Plant Manager

35D. E-mail:  
robert.j.fehrenbacher@dupont.com

36E. Phone: 304-863-4305

36F. FAX: 304-863-4962

36A. Printed name of contact person (if different from above): David F. Altman

36B. Title: Sr. Env. Control Consult.

36C. E-mail: david.f.altman@dupont.com

36D. Phone: 304-863-4271

36E. FAX: 304-863-4862

**PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate               | <input checked="" type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet            |
| <input checked="" type="checkbox"/> Attachment B: Map(s)                             | <input checked="" type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s)                     |
| <input checked="" type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input checked="" type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s)            |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion              | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations                |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan                          | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s)   | <input checked="" type="checkbox"/> Attachment P: Public Notice                                    |
| <input checked="" type="checkbox"/> Attachment G: Process Description                | <input checked="" type="checkbox"/> Attachment Q: Business Confidential Claims                     |
| <input checked="" type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input type="checkbox"/> Attachment R: Authority Forms   |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table               | <input checked="" type="checkbox"/> Attachment S: Title V Permit Revision Information              |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee  |

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

**FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:**

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
- NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
- Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
- NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
- NSR permit writer should notify a Title V permit writer of draft permit,
- Public notice should reference both 45CSR13 and Title V permits,
- EPA has 45 day review period of a draft permit.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

**ATTACHMENT A**

**Business Certificate**

**WEST VIRGINIA  
STATE TAX DEPARTMENT  
BUSINESS REGISTRATION  
CERTIFICATE**

ISSUED TO:  
**E I DUPONT DE NEMOURS & COMPANY INC  
8480 DUPONT RD PO BOX 1217  
WASHINGTON, WV 26181-8398**

**BUSINESS REGISTRATION ACCOUNT NUMBER: 1030-4756**

This certificate is issued on: **07/20/2010**

*This certificate is issued by  
the West Virginia State Tax Commissioner  
in accordance with Chapter 11, Article 12, of the West Virginia Code*

*The person or organization identified on this certificate is registered  
to conduct business in the State of West Virginia at the location above.*

**This certificate is not transferrable and must be displayed at the location for which issued.  
This certificate shall be permanent until cessation of the business for which the certificate of registration  
was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.**

**Change in name or change of location shall be considered a cessation of the business and a new  
certificate shall be required.**

**TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.  
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of  
this certificate displayed at every job site within West Virginia.**

**ATTACHMENT B**

**Site Location Map**

**DIRECTIONS:**



**FROM AIRPORT:**

1. Exit Airport Rd to Rte 31 S (right)
2. Rte 31 S to Rte 2 S (right)
3. Rte 2 S to Rte 68 S (Emerson Ave)

**A) Washington Works**

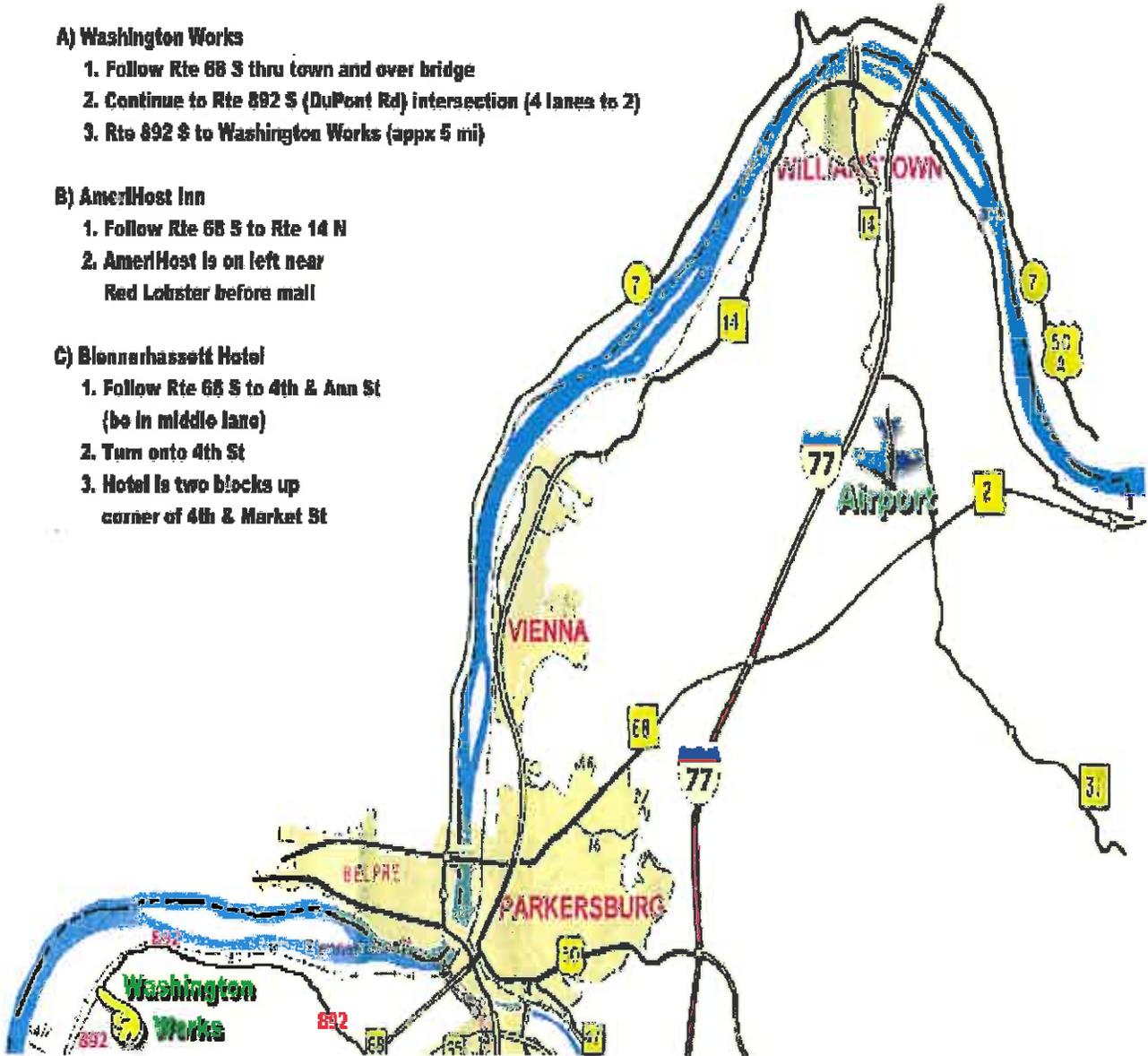
1. Follow Rte 88 S thru town and over bridge
2. Continue to Rte 892 S (DuPont Rd) intersection (4 lanes to 2)
3. Rte 892 S to Washington Works (appx 5 mi)

**B) AmeriHost Inn**

1. Follow Rte 68 S to Rte 14 N
2. AmeriHost is on left near Red Lobster before mall

**C) Blennerhassett Hotel**

1. Follow Rte 68 S to 4th & Ann St (be in middle lane)
2. Turn onto 4th St
3. Hotel is two blocks up corner of 4th & Market St



## **Attachment C** **Schedule**

**This application is to request approval to install and operate two new HCl storage tanks.**

**Attachment C – Planned Schedule**

**Hydrochloric Acid Storage Tank Installation Project**

**Air Construction Permit R13-1823J**

**Anticipated Construction Start Date: May 1, 2015**  
**Anticipated Construction Completion Date: July 15, 2015**  
**Anticipated Start-up Date: July 31, 2015**

**ATTACHMENT D**

**Applicable Requirements & Methods of  
Compliance**

## Regulatory Discussion

The following regulations apply to the proposed modification: West Virginia Regulations 7, 13, 30, US EPA MACT Standards for Hydrochloric Acid Production at 40 CFR Subpart NNNNN and Federal NESHAPs for equipment leaks under 40 CFR Subpart H.

The existing HCl manufacturing system, which includes the aqueous HCl Storage Tank and process vents, is regulated under the HCl MACT, which requires Monomer to maintain 99% control efficiency of HCl and Cl<sub>2</sub> at the North Tank Farm Scrubber, or reduce the HCl outlet concentration to ≤20 ppmv and Cl<sub>2</sub> to ≤100 ppmv. This same requirement applies to the two proposed HCl storage tanks. The installation and operation of the new tanks does not trigger additional requirements under the HCl MACT. DuPont will continue to conduct the required performance testing under the HCl MACT to verify compliance with the emission standards.

45 CSR 7 may apply to vent streams from the proposed tanks prior to controls. Vents from both tanks will be captured by a water scrubber to prevent particulate and/or visible emissions.

DuPont has implemented a leak detection and repair (LDAR) program for fugitive emission equipment in HCl service (30% by weight or higher) under the heavy liquid requirements found in 40 CFR 63.169. This program will be extended to such equipment installed under this proposal.

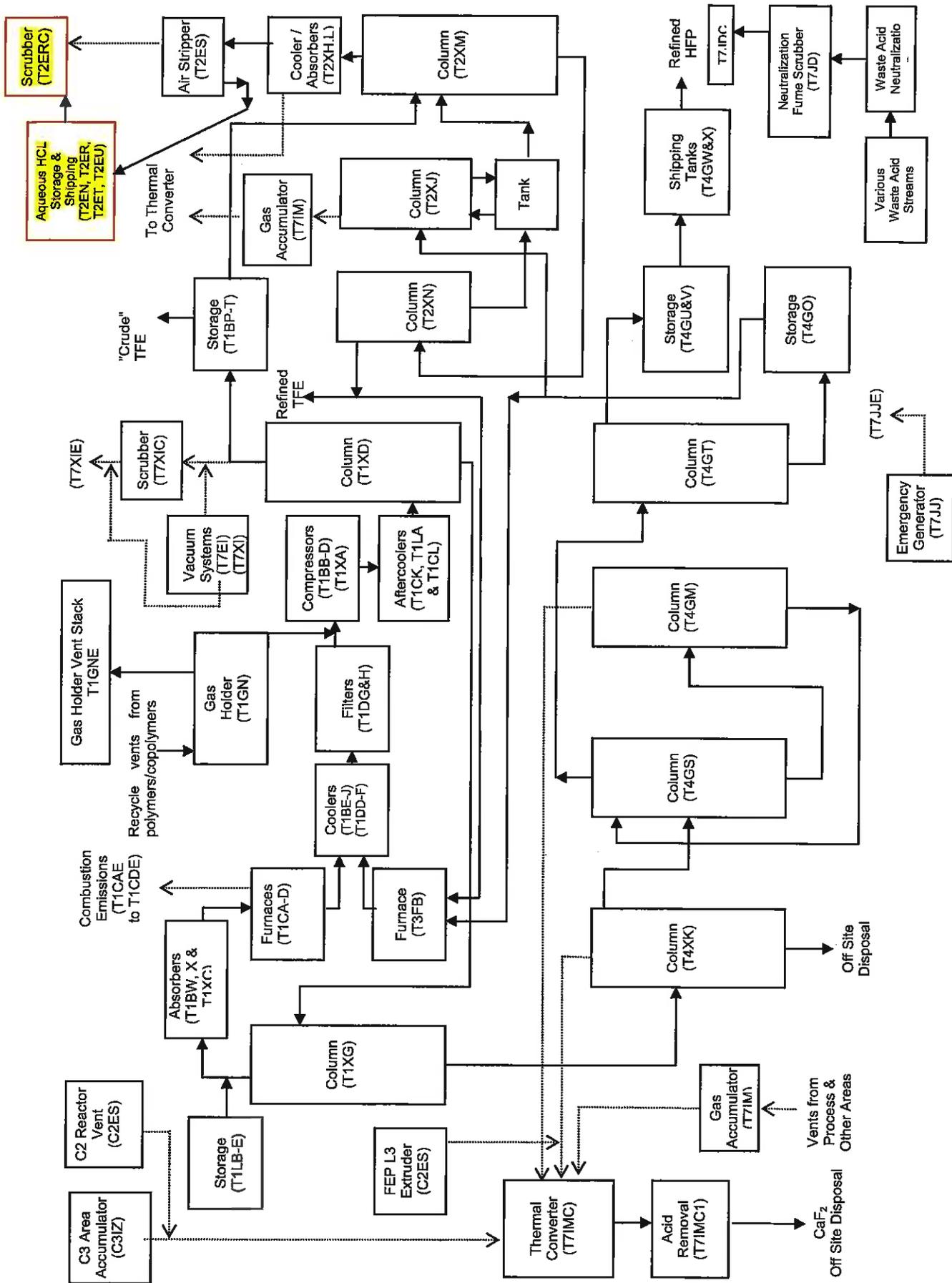
Supporting calculations are included in Attachment N of this permit amendment application. Those calculations show a slight increase in emissions that will be well below the hazardous air pollutant thresholds of 2 lbs/hr or 5 tons/yr. Nevertheless, this application is being submitted to WV DEP under 45 CSR 13 to include the two new tanks as sources under the existing air permit, and allow for the slight increase in emissions under the permit. Additionally, DuPont has provided Attachment S to revise Section 2 of 14 of Title V Operating Permit R30-10700001-2010 to include the changes that are anticipated in construction permit R13-1823.

**ATTACHMENT E**

**Plot Plan**



**ATTACHMENT F**  
**Process Flow Diagram**



# **ATTACHMENT G**

## **Process Description and Permit Background**

## T1-T4, T7 Area

The T1-T4, T7 area produces fluoromonomers tetrafluoroethylene (TFE) and hexafluoropropylene (HFP); an intermediate, perfluorocyclobutane; and byproducts hydrogen chloride (HCl, aqueous) and calcium fluoride (CaF<sub>2</sub>, solid). The production facility is divided into the following logical sections: T1-TFE Synthesis, T2-TFE Refining, T3-HFP Synthesis, T4-HFP Refining, and T7-Utilities.

Fluorocarbons are reacted by pyrolysis in T1 section and the products are separated to form crude TFE and recovered byproducts. TFE is refined in T2 section. In-process materials and intermediates are reacted by pyrolysis in T3 section to form crude HFP that is then refined in T4 section.

T7 section is comprised of several utilities, including refrigeration and cold brine supply, the unit vacuum systems for maintenance clearing of equipment, waste acid neutralization, and the thermal converter. The thermal converter combusts fluorine-containing byproduct gases from the other process sections (and from polymerization operations in C1, C2, and T6 sections) and two different non-hazardous fluorine-containing liquid streams to produce aqueous hydrogen fluoride (HF) which is reacted with slaked lime (calcium oxide or CaO) to form CaF<sub>2</sub>.

Aqueous HCl is produced from anhydrous HCl, which is created as a byproduct of the manufacture of fluorocarbons. This acid is stored in FRP storage tanks until being loaded into railcars for sale. The HCl production unit is subject to 40 CFR 63 subpart NNNNN – the HCl MACT – as an existing facility; it was started up prior to April 17, 2003. The HCl section of the unit has capacity sufficient to produce up to Confidential hydrochloric acid. The subject equipment will include the portion of the unit at and beyond which aqueous hydrochloric acid is produced. The product acid is air-stripped to remove organics and then is stored in a vessel. The main process emissions, including compounds from the fluorocarbon production, are vented to a thermal incinerator equipped with a primary recovery scrubber followed by a secondary caustic scrubber. Emissions from the air stripper, the storage vessel and loading operations are vented through a separate water scrubber system. The underflow of the scrubber is used for make-up in the process, so the collected material is recovered into the product. The unit also has potential emissions from equipment leaks.

**ATTACHMENT H**

**Material Safety Data Sheets**

## Material Safety Data Sheet

**HCL 22**

Version 2.0

Revision Date 12/19/2011

Ref. 130000024360

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : HCL 22  
 Tradename/Synonym : HYDROCHLORIC ACID  
 HYDROGEN CHLORIDE  
 AQUEOUS HYDROGEN CHLORIDE  
 MURIATIC ACID

MSDS Number : 130000024360

Manufacturer : DuPont  
 1007 Market Street  
 Wilmington, DE 19898

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)  
 Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
 Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

**SECTION 2. HAZARDS IDENTIFICATION**

## Potential Health Effects

## Skin

Hydrochloric acid : Causes severe skin burns.  
 May cause: Corrosion with pain, ulceration or blisters, cracking or peeling of skin.

## Eyes

Hydrochloric acid : Causes eye burns. Corrosive, may cause permanent eye injury if not promptly treated.  
 May cause blindness.

## Inhalation

Hydrochloric acid : Causes respiratory tract irritation. May cause: Nausea, Fluid in the lungs (pulmonary oedema) with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness of breath and bluish discoloration of the skin (symptoms might be delayed).

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**Ingestion**  
 Hydrochloric acid : If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Aspiration hazard if swallowed - can enter lungs and cause damage., Symptoms may be delayed..

**Repeated exposure**  
 Hydrochloric acid : Adverse effects from repeated inhalation may include: Altered lung function or difficulty breathing

**Target Organs**  
 Hydrochloric acid : Respiratory Tract Lungs

**Carcinogenicity**  
 None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Concentration
Water	7732-18-5	64 %
Hydrochloric acid	7647-01-0	36 %

**SECTION 4. FIRST AID MEASURES**

**Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician.

**Eye contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. Take victim immediately to hospital. Call a physician. Apply cool packs on eyes while transporting to medical facility.

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- Inhalation : Remove to fresh air. Call a physician. Give oxygen. If not breathing, give artificial respiration. Keep patient warm and at rest.
- Ingestion : Call a physician immediately. Immediately give large quantities of water to drink. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.

**SECTION 5. FIREFIGHTING MEASURES**

- Fire and Explosion Hazard : Hydrogen may accumulate inside metal equipment and reach explosive concentration.
- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Firefighting Instructions : Wear full protective clothing and self-contained breathing apparatus. Will react with most metals, releasing potentially explosive hydrogen gas. Cool containers / tanks with water spray. Neutralize runoff with lime, soda ash, etc., to prevent corrosion of metals and formation of hydrogen gas.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Keep upwind of leak - evacuate until gas has dispersed. Comply with Federal, State and Local regulations on reporting releases
- Spill Cleanup : Dike spill. Flush with plenty of water. Neutralize spill with lime or soda ash. Dilute with water fog (direct addition of water or alkali causes heat and violent spattering).
- Accidental Release Measures : Prevent material from entering sewers, waterways, or low areas. Evacuate area. Wear self-contained breathing apparatus (SCBA). Dike spill.

**SECTION 7. HANDLING AND STORAGE**

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- Handling (Personnel)** : Avoid contact with skin, eyes and clothing. Avoid breathing vapours or mist. Wash thoroughly after handling.
- Storage** : Store in cool place. Keep container tightly closed. Keep away from heat, sparks and flames. Do not store or mix with cyanides, sulfides, or formaldehyde Protect containers from damage.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

- Engineering controls** : Good general ventilation should be provided to keep fume and mist concentrations below exposure limits.
- Personal protective equipment**
- Respiratory protection** : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.
- Eye protection** : Wear chemical splash goggles in combination with a full-length face shield or an acid hood.
- Skin and body protection** : When there is potential for skin contact, have available and wear as appropriate: neoprene rubber gauntlet gloves, boots, and neoprene or vinyl jacket and pants.  
If there is any possibility of direct contact, wear a full acid suit of neoprene, vinyl or other acid resistant material with hood, gloves, boots, and self-contained breathing apparatus  
For large leaks or in an emergency situation, the highest degree of protection is provided by a fully encapsulating acid resistant suit (one piece construction) with an independent air supply.  
Protective clothing and equipment should be not worn or carried outside of the operating area.  
Wash protective clothing and equipment under a safety shower after exposure, or suspected exposure, to hydrochloric acid.

**Exposure Guidelines**  
**Exposure Limit Values**  
 Hydrochloric acid

PEL:	(OSHA)	5 ppm	7 mg/m <sup>3</sup>	TLV-C
PEL:	(OSHA)	5 ppm	7 mg/m <sup>3</sup>	Ceiling

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TLV	(ACGIH)	2 ppm	TLV-C
AEL *	(DUPONT)	5 ppm	15 minute TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form	: clear liquid
Color	: colourless, to, light yellow
Odor	: acrid, pungent
pH	: < 1
Freezing point	: -66 °C (-87 °F)
Boiling point	: 62 °C (144 °F)
Vapour Pressure	: 112.0 hPa at 25 °C (77 °F) : 282.6 hPa at 38 °C (100 °F)
Specific gravity	: 1.18
Vapour density	: 1.3 (Air = 1.0)
Evaporation rate	: > 1 (Butyl Acetate=1.0)

**SECTION 10. STABILITY AND REACTIVITY**

Stability	: Stable at normal temperatures and storage conditions.
Incompatibility	: Gives off hydrogen by reaction with metals. Reacts with oxidizing agents, generating chlorine., Reacts with cyanides, generating hydrogen cyanide., Reacts with sulfides, generating hydrogen sulfide., Reacts with formaldehyde, generating bischloromethyl ether (as OSHA regulated carcinogen).
Hazardous decomposition products	: Heat can cause evolution of gaseous hydrogen chloride.
Hazardous reactions	: Polymerization will not occur.

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**SECTION 11. TOXICOLOGICAL INFORMATION**

## Hydrochloric acid

- Dermal LD50 : 1,449 mg/kg , mouse  
 Oral Acute toxicity estimate : 0.5 mg/kg , animals (unspecified species)  
 Inhalation 4 h LC50 : 1 mg/l , rat  
 Inhalation :  
     Target Organs: Respiratory Tract  
     Respiratory tract irritation  
 Skin irritation : Corrosive, rabbit  
 Eye irritation : Corrosive, rabbit  
 Skin sensitization : Did not cause sensitization on laboratory animals., guinea pig  
 Repeated dose toxicity : Inhalation  
     rat  
     Target Organs: Respiratory Tract  
     Respiratory tract damage  
 Carcinogenicity : Overall weight of evidence indicates that the substance is not carcinogenic.  
 Mutagenicity : Caused genetic damage in cultured mammalian cells.  
     Did not cause genetic damage in cultured bacterial cells.

**SECTION 12. ECOLOGICAL INFORMATION**

## Aquatic Toxicity

- Hydrochloric acid  
 96 h LC50 : Gambusia affinis (Mosquito fish) 282 mg/l

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**SECTION 13. DISPOSAL CONSIDERATIONS**

Waste Disposal : Comply with applicable Federal, State/Provincial and Local Regulations. If approved, drain neutralized washings to a waste treatment plant, or transfer to a disposal contractor.

**SECTION 14. TRANSPORT INFORMATION**

DOT	UN number	: 1789
	Proper shipping name	: Hydrochloric acid
	Class	: 8
	Packing group	: II
	Labelling No.	: 8
	Reportable Quantity	: 5,000 lbs Hydrochloric acid
IATA_C	UN number	: 1789
	Proper shipping name	: Hydrochloric acid
	Class	: 8
	Packing group	: II
	Labelling No.	: 8
IMDG	UN number	: 1789
	Proper shipping name	: Hydrochloric acid
	Class	: 8
	Packing group	: II
	Labelling No.	: 8

**SECTION 15. REGULATORY INFORMATION**

SARA 313 Regulated Chemical(s) : Hydrochloric acid

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- CERCLA Reportable Quantity : 13,755 lbs  
Based on the percentage composition of this chemical in the product.:  
Hydrochloric acid
- SARA Reportable Quantity : 13,755 lbs  
Based on the percentage composition of this chemical in the product.:  
Hydrochloric acid
- California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.  
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
- PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Hydrochloric acid
- NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Hydrochloric acid

**SECTION 16. OTHER INFORMATION**

## HMIS

- Health : 3
- Flammability : 0
- Reactivity/Physical hazard : 1
- PPE : Personal Protection rating to be supplied by user depending on use conditions.

Before use read DuPont's safety information.

For further information contact the local DuPont office or DuPont's nominated distributors.

® DuPont's registered trademark

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

# Material Safety Data Sheet



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Significant change from previous version is denoted with a double bar.

**ATTACHMENT I**

**Emission Units Table**



**Attachment J**

**Emission Points Data Summary Sheet**

**EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>3</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
T2ERE	Upward Vertical Stack	T2ER	HCl tank	T2ERC	Scrubber	C	8760	Hydrochloric Acid 7647-01-0	0.32	1.40	3.2 x 10E-4	0.001	GA	ST -	0.08 ppmv
		T2ES	HCl Cooler / Absorber Air Stripper	T2ERC	Scrubber	C	8760	Chlorine 7782-50-5	2.12 x 10E-4	9.0 x 10E-4	2.12 x 10E-4	9.0 x 10E-4		7/27/10, MB	0.028 ppmv on 7/27/10*
		T2XH, T2XL	HCl Cooler / Absorber Vent	T2ERC	Scrubber	C	876								

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, H<sub>2</sub>O, Na, O<sub>2</sub>, and Noble Gases.
- Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m<sup>3</sup>) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO<sub>2</sub>, use units of ppmv (See 45CSR10).

**Attachment d copy**  
**EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>3</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
T2ERE	Upward Vertical Stack	T2EN	HCl Tank car loading	T2ERC	Scrubber	C	1082	Hydrochloric Acid 7647-01-0	3.64	1.97	0.004	0.002	G/V	EE	<0.008 ppmv
		T2ET, T2EU	Proposed HCl Tanks 1 and 2	T2ERC	Scrubber	C	8760	Hydrochloric Acid 7647-01-0 Chlorine 7782-50-5	0.32	1.40	3.2 x 10E-4 2.12 x 10E-4	0.001 9.0 x 10E-4	G/V	ST - 7/27/10, MB	0.08 ppmv 0.028 ppmv on 7/27/10*

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- 1 Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- 2 Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- 3 List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.
- 4 Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- 5 Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- 6 Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- 7 Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m<sup>3</sup>) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO<sub>2</sub>, use units of ppmv (See 45CSR10).



**Attachment K**

**Fugitive Emissions Data Summary Sheet**

**Attachment K****FUGITIVE EMISSIONS DATA SUMMARY SHEET**

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS	
1.) Will there be haul road activities?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."	

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS <sup>1</sup>	Maximum Potential Uncontrolled Emissions <sup>2</sup>		Maximum Potential Controlled Emissions <sup>3</sup>		Est. Method Used <sup>4</sup>
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads		Does not apply		Does not apply		
Unpaved Haul Roads		Does not apply		Does not apply		
Storage Pile Emissions		Does not apply		Does not apply		
Loading/Unloading Operations		Does not apply		Does not apply		
Wastewater Treatment Evaporation & Operations		Does not apply		Does not apply		
Equipment Leaks		Does not apply		Does not apply		
General Clean-up VOC Emissions		Does not apply		Does not apply		
Other		Does not apply		Does not apply		

<sup>1</sup> List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.

<sup>2</sup> Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>3</sup> Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>4</sup> Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

**Attachment L**  
**Emission Unit Data Sheets**

## Attachment L EMISSIONS UNIT DATA SHEET STORAGE TANKS

Provide the following information for each new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT [www.epa.gov/tnn/tanks.html](http://www.epa.gov/tnn/tanks.html)), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER, SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS" MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (<http://www.epa.gov/tnn/chieff/>).

### I. GENERAL INFORMATION (required)

1. Bulk Storage Area Name HCl Product Storage	2. Tank Name HCl Aqueous Act Tank #1
3. Tank Equipment Identification No. (as assigned on <i>Equipment List Form</i> ) T2ET	4. Emission Point Identification No. (as assigned on <i>Equipment List Form</i> ) T2ERE
5. Date of Commencement of Construction (for existing tanks)	
6. Type of change <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> New Stored Material <input type="checkbox"/> Other Tank Modification	
7. Description of Tank Modification (if applicable)	
7A. Does the tank have more than one mode of operation? (e.g. Is there more than one product stored in the tank?) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode).	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.).	

### II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height.  Claimed Confidential	
9A. Tank Internal Diameter (ft) Claimed Confidential	9B. Tank Internal Height (or Length) (ft) Claimed Confidential
10A. Maximum Liquid Height (ft) Claimed Confidential	10B. Average Liquid Height (ft) Claimed Confidential
11A. Maximum Vapor Space Height (ft) Claimed Confidential	11B. Average Vapor Space Height (ft) Claimed Confidential
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights.  Claimed Confidential	

13A. Maximum annual throughput (gal/yr) Claimed Confidential	13B. Maximum daily throughput (gal/day) Claimed Confidential
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) Claimed Confidential	
15. Maximum tank fill rate (gal/min) Claimed Confidential	
16. Tank fill method <input checked="" type="checkbox"/> Submerged <input type="checkbox"/> Splash <input type="checkbox"/> Bottom Loading	
17. Complete 17A and 17B for Variable Vapor Space Tank Systems <input checked="" type="checkbox"/> Does Not Apply	
17A. Volume Expansion Capacity of System (gal)	17B. Number of transfers into system per year
18. Type of tank (check all that apply): <input checked="" type="checkbox"/> Fixed Roof <input checked="" type="checkbox"/> vertical    ___ horizontal    ___ flat roof    ___ cone roof <input checked="" type="checkbox"/> dome roof ___ other (describe) <input type="checkbox"/> External Floating Roof    ___ pontoon roof    ___ double deck roof <input type="checkbox"/> Domed External (or Covered) Floating Roof <input type="checkbox"/> Internal Floating Roof    ___ vertical column support    ___ self-supporting <input type="checkbox"/> Variable Vapor Space    ___ lifter roof    ___ diaphragm <input type="checkbox"/> Pressurized    ___ spherical    ___ cylindrical <input type="checkbox"/> Underground <input type="checkbox"/> Other (describe)	

### III. TANK CONSTRUCTION & OPERATION INFORMATION (optional if providing TANKS Summary Sheets)

19. Tank Shell Construction: <input type="checkbox"/> Riveted <input type="checkbox"/> Gunite lined <input type="checkbox"/> Epoxy coated steels <input type="checkbox"/> Other (describe)		
20A. Shell Color	20B. Roof Color	20C. Year Last Painted
21. Shell Condition (if metal and unlined): <input type="checkbox"/> No Rust <input type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable		
22A. Is the tank heated? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
22B. If YES, provide the operating temperature (°F)		
22C. If YES, please describe how heat is provided to tank.		
23. Operating Pressure Range (psig): _____ to _____		
24. Complete the following section for <b>Vertical Fixed Roof Tanks</b>		<input type="checkbox"/> Does Not Apply
24A. For dome roof, provide roof radius (ft)		
24B. For cone roof, provide slope (ft/ft)		
25. Complete the following section for <b>Floating Roof Tanks</b>		<input type="checkbox"/> Does Not Apply
25A. Year Internal Floaters Installed:		
25B. Primary Seal Type: (check one) <input type="checkbox"/> Metallic (Mechanical) Shoe Seal <input type="checkbox"/> Liquid Mounted Resilient Seal <input type="checkbox"/> Vapor Mounted Resilient Seal <input type="checkbox"/> Other (describe):		
25C. Is the Floating Roof equipped with a Secondary Seal? <input type="checkbox"/> YES <input type="checkbox"/> NO		
25D. If YES, how is the secondary seal mounted? (check one) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):		
25E. Is the Floating Roof equipped with a weather shield? <input type="checkbox"/> YES <input type="checkbox"/> NO		

25F. Describe deck fittings; indicate the number of each type of fitting:		
ACCESS HATCH		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
AUTOMATIC GAUGE FLOAT WELL		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
COLUMN WELL		
BUILT-UP COLUMN - SLIDING COVER, GASKETED:	BUILT-UP COLUMN - SLIDING COVER, UNGASKETED:	PIPE COLUMN - FLEXIBLE FABRIC SLEEVE SEAL:
LADDER WELL		
PIP COLUMN - SLIDING COVER, GASKETED:	PIPE COLUMN - SLIDING COVER, UNGASKETED:	
GAUGE-HATCH/SAMPLE PORT		
SLIDING COVER, GASKETED:	SLIDING COVER, UNGASKETED:	
ROOF LEG OR HANGER WELL		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)
VACUUM BREAKER		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
RIM VENT		
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
DECK DRAIN (3-INCH DIAMETER)		
OPEN:	90% CLOSED:	
STUB DRAIN		
1-INCH DIAMETER:		
OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)		

26. Complete the following section for Internal Floating Roof Tanks <input type="checkbox"/> Does Not Apply	
26A. Deck Type: <input type="checkbox"/> Bolted <input type="checkbox"/> Welded	
26B. For Bolted decks, provide deck construction:	
26C. Deck seam:	
<input type="checkbox"/> Continuous sheet construction 5 feet wide	
<input type="checkbox"/> Continuous sheet construction 6 feet wide	
<input type="checkbox"/> Continuous sheet construction 7 feet wide	
<input type="checkbox"/> Continuous sheet construction 5 × 7.5 feet wide	
<input type="checkbox"/> Continuous sheet construction 5 × 12 feet wide	
<input type="checkbox"/> Other (describe)	
26D. Deck seam length (ft)	26E. Area of deck (ft <sup>2</sup> )
For column supported tanks:	26G. Diameter of each column:
26F. Number of columns:	

**IV. SITE INFORMATION** (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based.
28. Daily Average Ambient Temperature (°F)
29. Annual Average Maximum Temperature (°F)
30. Annual Average Minimum Temperature (°F)
31. Average Wind Speed (miles/hr)
32. Annual Average Solar Insulation Factor (BTU/(ft <sup>2</sup> ·day))
33. Atmospheric Pressure (psia)

**V. LIQUID INFORMATION** (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid:			
34A. Minimum (°F)	34B. Maximum (°F)		
35. Average operating pressure range of tank:			
35A. Minimum (psig)	35B. Maximum (psig)		
36A. Minimum Liquid Surface Temperature (°F)	36B. Corresponding Vapor Pressure (psia)		
37A. Average Liquid Surface Temperature (°F)	37B. Corresponding Vapor Pressure (psia)		
38A. Maximum Liquid Surface Temperature (°F)	38B. Corresponding Vapor Pressure (psia)		
39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.			
39A. Material Name or Composition			
39B. CAS Number			
39C. Liquid Density (lb/gal)			
39D. Liquid Molecular Weight (lb/lb-mole)			
39E. Vapor Molecular Weight (lb/lb-mole)			

Maximum Vapor Pressure 39F. True (psia)			
39G. Reid (psia)			
Months Storage per Year 39H. From			
39I. To			

**VI. EMISSIONS AND CONTROL DEVICE DATA (required)**

40. Emission Control Devices (check as many as apply):  Does Not Apply

- Carbon Adsorption<sup>1</sup>
- Condenser<sup>1</sup>
- Conservation Vent (psig)
  - Vacuum Setting
  - Pressure Setting
- Emergency Relief Valve (psig)
- Inert Gas Blanket of
- Insulation of Tank with
- Liquid Absorption (scrubber)<sup>1</sup>
- Refrigeration of Tank
- Rupture Disc (psig)
- Vent to Incinerator<sup>1</sup>
- Other<sup>1</sup> (describe):

<sup>1</sup> Complete appropriate Air Pollution Control Device Sheet.

41. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name & CAS No.	Breathing Loss (lb/hr)	Working Loss		Annual Loss (lb/yr)	Estimation Method <sup>1</sup>
		Amount	Units		
HCl / 7647-01-0	0.00028	0.00028	lbs/hr	2.5	ST, MB

<sup>1</sup> EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

Remember to attach emissions calculations, including TANKS Summary Sheets if applicable.

## Attachment L EMISSIONS UNIT DATA SHEET STORAGE TANKS

Provide the following information for each new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT [www.epa.gov/tnn/tanks.html](http://www.epa.gov/tnn/tanks.html)), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS" MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (<http://www.epa.gov/tnn/chieft/>).

### I. GENERAL INFORMATION (required)

1. Bulk Storage Area Name HCl Product Storage	2. Tank Name HCl Aqueous Acet Tank #2
3. Tank Equipment Identification No. (as assigned on <i>Equipment List Form</i> ) T2EU	4. Emission Point Identification No. (as assigned on <i>Equipment List Form</i> ) T2ERE
5. Date of Commencement of Construction (for existing tanks)	
6. Type of change <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> New Stored Material <input type="checkbox"/> Other Tank Modification	
7. Description of Tank Modification (if applicable)	
7A. Does the tank have more than one mode of operation? (e.g. Is there more than one product stored in the tank?) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode).	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.).	

### II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. <div style="text-align: center;">Claimed Confidential</div>	
9A. Tank Internal Diameter (ft) <div style="text-align: center;">Claimed Confidential</div>	9B. Tank Internal Height (or Length) (ft) <div style="text-align: center;">Claimed Confidential</div>
10A. Maximum Liquid Height (ft) <div style="text-align: center;">Claimed Confidential</div>	10B. Average Liquid Height (ft) <div style="text-align: center;">Claimed Confidential</div>
11A. Maximum Vapor Space Height (ft) <div style="text-align: center;">Claimed Confidential</div>	11B. Average Vapor Space Height (ft) <div style="text-align: center;">Claimed Confidential</div>
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. <div style="text-align: center;">Claimed Confidential</div>	

13A. Maximum annual throughput (gal/yr) Claimed Confidential	13B. Maximum daily throughput (gal/day) Claimed Confidential
14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume) Claimed Confidential	
15. Maximum tank fill rate (gal/min) Claimed Confidential	
16. Tank fill method <input checked="" type="checkbox"/> Submerged <input type="checkbox"/> Splash <input type="checkbox"/> Bottom Loading	
17. Complete 17A and 17B for Variable Vapor Space Tank Systems <input checked="" type="checkbox"/> Does Not Apply	
17A. Volume Expansion Capacity of System (gal)	17B. Number of transfers into system per year
18. Type of tank (check all that apply): <input checked="" type="checkbox"/> Fixed Roof <input checked="" type="checkbox"/> vertical <input type="checkbox"/> horizontal <input type="checkbox"/> flat roof <input type="checkbox"/> cone roof <input checked="" type="checkbox"/> dome roof <input type="checkbox"/> other (describe) <input type="checkbox"/> External Floating Roof <input type="checkbox"/> pontoon roof <input type="checkbox"/> double deck roof <input type="checkbox"/> Domed External (or Covered) Floating Roof <input type="checkbox"/> Internal Floating Roof <input type="checkbox"/> vertical column support <input type="checkbox"/> self-supporting <input type="checkbox"/> Variable Vapor Space <input type="checkbox"/> lifter roof <input type="checkbox"/> diaphragm <input type="checkbox"/> Pressurized <input type="checkbox"/> spherical <input type="checkbox"/> cylindrical <input type="checkbox"/> Underground <input type="checkbox"/> Other (describe)	
<b>III. TANK CONSTRUCTION &amp; OPERATION INFORMATION</b> (optional if providing TANKS Summary Sheets)	
19. Tank Shell Construction: <input type="checkbox"/> Riveted <input type="checkbox"/> Gunite lined <input type="checkbox"/> Epoxy-coated rivets <input type="checkbox"/> Other (describe)	
20A. Shell Color	20B. Roof Color
20C. Year Last Painted	
21. Shell Condition (if metal and unlined): <input type="checkbox"/> No Rust <input type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable	
22A. Is the tank heated? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
22B. If YES, provide the operating temperature (°F)	
22C. If YES, please describe how heat is provided to tank.	
23. Operating Pressure Range (psig): _____ to _____	
24. Complete the following section for <b>Vertical Fixed Roof Tanks</b> <input type="checkbox"/> Does Not Apply	
24A. For dome roof, provide roof radius (ft)	
24B. For cone roof, provide slope (ft/ft)	
25. Complete the following section for <b>Floating Roof Tanks</b> <input type="checkbox"/> Does Not Apply	
25A. Year Internal Floaters Installed:	
25B. Primary Seal Type: <input type="checkbox"/> Metallic (Mechanical) Shoe Seal <input type="checkbox"/> Liquid Mounted Resilient Seal <input type="checkbox"/> Vapor Mounted Resilient Seal <input type="checkbox"/> Other (describe):	
25C. Is the Floating Roof equipped with a Secondary Seal? <input type="checkbox"/> YES <input type="checkbox"/> NO	
25D. If YES, how is the secondary seal mounted? (check one) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):	
25E. Is the Floating Roof equipped with a weather shield? <input type="checkbox"/> YES <input type="checkbox"/> NO	

25F. Describe deck fittings; indicate the number of each type of fitting:		
ACCESS HATCH		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
AUTOMATIC GAUGE FLOAT WELL		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:
COLUMN WELL		
BUILT-UP COLUMN - SLIDING COVER, GASKETED:	BUILT-UP COLUMN - SLIDING COVER, UNGASKETED:	PIPE COLUMN - FLEXIBLE FABRIC SLEEVE SEAL:
LADDER WELL		
PIP COLUMN - SLIDING COVER, GASKETED:	PIPE COLUMN - SLIDING COVER, UNGASKETED:	
GAUGE-HATCH/SAMPLE PORT		
SLIDING COVER, GASKETED:	SLIDING COVER, UNGASKETED:	
ROOF LEG OR HANGER WELL		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)
VACUUM BREAKER		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
RIM VENT		
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	
DECK DRAIN (3-INCH DIAMETER)		
OPEN:	90% CLOSED:	
STUB DRAIN		
1-INCH DIAMETER:		
OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)		

26. Complete the following section for Internal Floating Roof Tanks <input type="checkbox"/> Does Not Apply	
26A. Deck Type: <input type="checkbox"/> Bolted <input type="checkbox"/> Welded	
26B. For Bolted decks, provide deck construction:	
26C. Deck seam:	
<input type="checkbox"/> Continuous sheet construction 5 feet wide <input type="checkbox"/> Continuous sheet construction 6 feet wide <input type="checkbox"/> Continuous sheet construction 7 feet wide <input type="checkbox"/> Continuous sheet construction 5 × 7.5 feet wide <input type="checkbox"/> Continuous sheet construction 5 × 12 feet wide <input type="checkbox"/> Other (describe)	
26D. Deck seam length (ft)	26E. Area of deck (ft <sup>2</sup> )
For column supported tanks:	26G. Diameter of each column:
26F. Number of columns:	

**IV. SITE INFORMATION** (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based.
28. Daily Average Ambient Temperature (°F)
29. Annual Average Maximum Temperature (°F)
30. Annual Average Minimum Temperature (°F)
31. Average Wind Speed (miles/hr)
32. Annual Average Solar Insulation Factor (BTU/(ft <sup>2</sup> ·day))
33. Atmospheric Pressure (psia)

**V. LIQUID INFORMATION** (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid:			
34A. Minimum (°F)	34B. Maximum (°F)		
35. Average operating pressure range of tank:			
35A. Minimum (psig)	35B. Maximum (psig)		
36A. Minimum Liquid Surface Temperature (°F)	36B. Corresponding Vapor Pressure (psia)		
37A. Average Liquid Surface Temperature (°F)	37B. Corresponding Vapor Pressure (psia)		
38A. Maximum Liquid Surface Temperature (°F)	38B. Corresponding Vapor Pressure (psia)		
39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.			
39A. Material Name or Composition			
39B. CAS Number			
39C. Liquid Density (lb/gal)			
39D. Liquid Molecular Weight (lb/lb-mole)			
39E. Vapor Molecular Weight (lb/lb-mole)			



**Attachment M**

**Air Pollution Control Device Sheets**



18. If the liquor is to be recirculated, describe any treatment performed: Recirculated liquid recycles to the process for recovery.	
19. Data for Venturi Scrubber:  Throat Dimensions: (Specify Units)  Throat Velocity:                      ft/sec	20. Data for Packed Towers:  Type of Packing: 1" Polypropylene Pall rings Superficial Gas Velocity through Bed: 0.94 ft/sec

#### Gas Stream Characteristics

21. Gas flow into the collector:  100          ACF @ 70          °F and 15          PSIA	22. Gas stream temperature:  Inlet:                      °F Outlet:                      °F
23. Gas flow rate:  Design Maximum:                      ACFM Average Expected: 100                      ACFM	24. Particulate Grain Loading in grains/scf:  Inlet: 14.3 Outlet: 0.014

Pollutant	IN		OUT		Guaranteed Minimum Collection Efficiency
	lb/hr	grains/acf	lb/hr	grains/acf	
A Hydrochloric Acid	4.2	4.9	0.004	0.0047	
B Chlorine	0.0004	0.0005	0.0004	0.0005	
C					
D					
E					

26. Type of pollutant(s) controlled: <input type="checkbox"/> SO <sub>x</sub> <input type="checkbox"/> Odor <input checked="" type="checkbox"/> Particulate (type):    Potentially HCl condensing particulate <input checked="" type="checkbox"/> Other: HCl vapors					
27. By what method were the uncontrolled emissions calculated? <input checked="" type="checkbox"/> Material Balance <input checked="" type="checkbox"/> Stack Test <input type="checkbox"/> Pilot Test <input type="checkbox"/> Other:					
28. Dimensions of stack:                      Height    78                      ft.                      Diameter    0.5                      ft					
29. Supply an equilibrium curve and/or solubility data (at various temperatures) for the proposed system.					
30. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 100 percent of design rating of collector.					

**Particulate Distribution**

31. Complete the table:		Fraction Efficiency of Collector
Particulate Size Range (microns)	Particle Size Distribution at Inlet to Collector	
	Weight % for Size Range	Weight % for Size Range
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		
32. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): N/A		
33. Describe the collection material disposal system: N/A		
34. Have you included <b>Wet Collecting (Scrubber) Control Device</b> in the Emissions Points Data Summary Sheet? Yes		

**35. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING:**

Continuous monitoring of scrubber base temperature, scrubber solution flow rate and recirculation pump current in amps.

**RECORDKEEPING:**

On a monthly basis: maximum scrubber temperature (not to exceed 82F); minimum scrubber solution flow rate (at least 1,000 pph) and minimum recirculation pump current in amps (at least 1.4 amps).

**REPORTING:**

All reports and notifications required to be submitted under 40 CFR 63, Subpart NNNNN - HCl MACT.

**TESTING:**

Performance tests shall be conducted in accordance with 40 CFR 63.9020 on the earlier of the Title V operating permit renewal or within 5 years of issuance of the Title V permit.

**MONITORING:**

Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.

**RECORDKEEPING:**

Please describe the proposed recordkeeping that will accompany the monitoring.

**REPORTING:**

Please describe any proposed emissions testing for this process equipment on air pollution control device.

**TESTING:**

Please describe any proposed emissions testing for this process equipment on air pollution control device.

**36. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.**

The sources exhausting to the scrubber are enclosed with a closed vent system, therefore all such air pollutants are captured and transferred to the control device.

**37. Manufacturer's Guaranteed Control Efficiency for each air pollutant.**

99.9% stated control efficiency for HCl

**38. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.**

**Attachment N**

**Supporting Emissions Calculations**

Attachment N – Supporting Calculations  
R13-1823J Permit Amendment Application

Teflon® Monomer plans to install two new hydrochloric acid (HCl) storage tanks to either be used instead of the existing **CLAIMED CONFIDENTIAL** gallon food grade (36 wt. %) HCl storage tank (T2ER) while the existing tank is maintained, and/or to be used in addition to the existing tank for storage of the same.

The existing HCl manufacturing system, which includes the Food Grade Storage Tank and process vents, is regulated under the HCl MACT, which requires Monomer to maintain 99% control efficiency of HCl and Cl<sub>2</sub> at the North Tank Farm Scrubber (T2ERC), or reduce the HCl outlet concentration at emission point T2ERE to ≤20 ppmv and Cl<sub>2</sub> to ≤100 ppmv. As required by the HCl MACT, performance testing for the North Tank Farm Scrubber occurred on 7/27/2010. During the second of three one-hour tests, the HCl Cooler/Absorber Stripped (T2ES) had the highest average make rate – **CLAIMED CONFIDENTIAL** lbs/hr into the Food Grade Acid Storage Tank. In addition, the nitrogen purge on the tank at the time of testing was ≥ 100 scfh. The average emission rate of HCl at the time of testing was 0.081 ppmv, calculated to be  $6.9 \times 10^{-5}$  lbs/hr. The average emission rate of Cl<sub>2</sub> at the time of testing was 0.028 ppmv, calculated to be  $4.62 \times 10^{-5}$  lbs/hr.

Based on the test results and the process data at the time of testing, and using the maximum (design) make rate of **CLAIMED CONFIDENTIAL** lbs/hr for the Cooler Absorber, a more realistic potential to emit may be calculated. Making the assumption that emissions directly correlate to production rate, and using the following simple ratio: HCl design emission rate =  $(6.9 \times 10^{-5} \text{ lbs/hr HCl emitted} / \text{CLAIMED CONFIDENTIAL lbs/hr production rate}) * \text{CLAIMED CONFIDENTIAL lbs/hr max production rate}$ ; new emission rate =  $3.2 \times 10^{-4}$  lbs/hr HCl or 0.001 tons/yr HCl.

Using the same methodology for chlorine: Cl<sub>2</sub> design emission rate =  $(4.62 \times 10^{-5} \text{ lbs/hr Cl}_2 \text{ emitted} / \text{CLAIMED CONFIDENTIAL lbs/hr production rate}) * \text{CLAIMED CONFIDENTIAL lbs/hr max production rate}$ ; new emission rate =  $2.12 \times 10^{-4}$  lbs/hr Cl<sub>2</sub> or 0.0009 tons/yr Cl<sub>2</sub>.

The North Tank Farm Scrubber has a manufacturer's stated control efficiency of 99.9% for HCl with an inlet loading of 22.06 lbs/hr; 14.3 grains/ACF. Therefore, if we back-calculate the pre-controlled emissions, using the potential-to-emit value above:  $x * ((100-99.9) * 0.01) = 0.00032 \text{ lbs/hr}$

Therefore,  $x = 0.00032 \text{ lbs/hr} / 0.001$ , or 0.32 lbs/hr pre-controlled HCl;

$0.32 \text{ lbs/hr HCl} * 8760 \text{ hours/yr} = 2803 \text{ lbs/yr}$  or 1.40 tons/yr

Since chlorine is not very soluble in water, we will claim no control efficiency for chlorine, therefore the emission rate for chlorine prior to the scrubber is expected to be the same as the emission rate provided above.

Since the estimated increase in HCl HAP emissions from the proposed HCl storage tanks are below the construction/modification permit thresholds of 2 lbs/hr or 5 tons/yr for Hazardous Air Pollutants, a Class II permit amendment is being submitted to DEP for approval. As DuPont understands, no new requirements will be imposed upon Teflon® Monomer under the HCl MACT. DuPont recognizes that the Monomer area must maintain 99% control efficiency for HCl and chlorine, or meet the emission standards of ≤20 ppmv HCl and ≤100 ppmv chlorine at the stack.

Additionally, Monomer will apply the previously approved LDAR plan under 40 CFR 63 Subpart H for heavy liquids to such equipment associated with the proposed storage tanks.

## 1.0 Introduction

On July 27, 2010, Shaw Environmental & Infrastructure, Inc., personnel conducted emission tests on the North Tank Farm Scrubber (NTFS) at the E.I. du Pont de Nemours and Company (DuPont) facility in Washington, West Virginia. Three test runs were conducted on the scrubber exhaust stack to determine hydrogen chloride (HCl) and chlorine (Cl<sub>2</sub>) concentrations and mass emission rates. In addition, exhaust gas flow rate; temperature; and moisture, carbon dioxide, and oxygen contents were measured. Sampling and analytical procedures were those described in U.S. Environmental Protection Agency (EPA) Methods 1 through 4 and 26A.\*

Mr. Okey Tucker of DuPont provided overall project coordination. Mr. Chris Ashley of DuPont provided process site coordination. The Shaw Project Manager was Mr. Dave Osterhout. The Shaw sampling team consisted of Messrs. Doug Cahill and Jerry Neese.

## 2.0 Summary of Results

HCl and Cl<sub>2</sub> emissions data are presented in Table 1. Exhaust gas conditions are summarized in Table 2. HCl and Cl<sub>2</sub> concentrations are reported in parts per million (ppm) and emission rates in pounds per hour (lb/h).

**Table 1**  
**Hydrogen Chloride (HCl) and Chlorine (Cl<sub>2</sub>) Emissions Data**  
**DuPont – North Tank Farm Scrubber**  
**July 27, 2010 (Shaw PN 139734-01)**

Run No.	Time (24-h)	Concentration (ppm) <sup>a</sup>		Emission Rate (lb/h) <sup>b</sup>	
		Hydrogen chloride	Chlorine	Hydrogen chloride	Chlorine
1	1150-1255	0.077	0.028	6.64x10 <sup>-5</sup>	4.62x10 <sup>-5</sup>
2	1330-1435	0.119	0.027	1.02x10 <sup>-4</sup>	4.53x10 <sup>-5</sup>
3	1448-1554	0.046	0.029	3.87x10 <sup>-5</sup>	4.72x10 <sup>-5</sup>
Average		0.081	0.028	6.90x10 <sup>-5</sup>	4.62x10 <sup>-5</sup>

<sup>a</sup> ppm = Parts per million.

<sup>b</sup> lb/h = Pounds per hour.

\* 40 CFR 60, Appendix A.

**Attachment O**

**Monitoring, Recordkeeping, Reporting and  
Testing Plans**

Attachment O – Monitoring, Recordkeeping, Reporting and Testing Plan  
R13-1823J Class II Permit Amendment Application

Monitoring

- Under section 7.2.3. of Title V Operating Air Permit R30-10700001-2010 (Part 2 of 14), the permittee will continue to monitor:
  - Scrubber base temperature, operating at or below 82°C; and
  - Fresh water make-up to the top section of the scrubber (T2ERC), measured with a flow meter, at or above 1,000 lbs/hr; or
  - Scrubber recirculation pump maintains power above 1.4 amps for recirculation of scrubber liquor

Recordkeeping

- In accordance with section 7.4.4. of the Title V permit, the permittee will continue to keep records of any malfunctions lasting in excess of 30 minutes
- The permittee shall maintain records that support compliance with HCl MACT emission standards, including the data collected as referenced in the Monitoring section above

Reporting

- The permittee will continue to provide semi-annual compliance reports required under HCl MACT at 40 CFR 63.9050.

Testing

- The permittee will continue to conduct performance testing every 5 years as required by HCl MACT in 40 CFR 63.9015.

# **Attachment P**

## **Public Notice**

## **AIR QUALITY PERMIT NOTICE Notice of Application**

Notice is given that E. I. du Pont de Nemours & Co. has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update for a plastic polymerization facility located on 8480 DuPont Road near Parkersburg in Wood County, West Virginia. The coordinates are: Latitude 39.270623 and Longitude -81.670979.

The applicant estimates the increased potential to discharge the following Regulated Air Pollutants will be: Hydrochloric Acid (HCl): 0.001 tons/year; Chlorine (Cl<sub>2</sub>): 0.0009 tons/year.

Startup of the altered operation is planned to begin on or about the 1<sup>st</sup> day of June 2015. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 19<sup>th</sup> day of January, 2015.

By: E. I du Pont de Nemours & Co.  
Robert J. Fehrenbacher  
Plant Manager  
8480 DuPont Road  
Washington, WV 26181-1217

## **Attachment S**

### **Title V Permit Revision Information**



<b>3. Change in Potential Emissions</b>		
<b>Pollutant</b>	<b>Change in Potential Emissions (+ or -), lb/hr</b>	<b>Change in Potential Emissions (+ or -), TPY</b>
HCl	No change in maximum potential	0.001
Cl2	No change in maximum potential	0.0009

<b>4. List other Active NSR Permits / Permit Determinations / Consent Orders associated with this permit revision (if any):</b>		
<b>NSR Permit and/or Consent Order Number</b>	<b>Date of Issuance</b>	<b>NSR Permit / Consent Order Condition Number</b>

<b>5. Inactive Permits / Obsolete Permit or Obsolete Consent Order(s) Conditions Associated With This Permit Revision</b>		
<b>NSR Permit and/or Consent Order Number</b>	<b>Date of Issuance</b>	<b>NSR Permit / Consent Order Condition Number</b>

**6. Suggested Title V Draft Permit Language**

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision?  Yes  No

If Yes, describe the changes below. Also, please provide suggested Title V Draft Permit language for these changes (including all applicable requirements and any monitoring /recordkeeping/ reporting requirements associated with the changes), or attach a marked up pages of current Title V Permit. Please include appropriate citations for those requirements being added / revised.

All proposed changes are within the scope of the Reg. 13 permit.  
Draft language for the Title V permit will not be provided as changes are in total emission limits only.

**7. Certification For Use Of Minor Modification Procedures (for Minor Modifications only)**

**Note:** This certification must be signed by a responsible official. Minor Modification applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:

- i. Proposed changes do not violate any applicable requirement;
- ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;
- iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;
- v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;
- vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 6.5.a.1.A. of 45CSR30 (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under this rule.

Pursuant to Section 6.5.a.2.C of 45CSR30, the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 6.5.a.1. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed):



(Please use blue ink)

Date:

Jan. / 23 / 2015

Named

Robert J. Fehrenbacher

Title:

Plant Manager

**NOTE:**

(1) For Administrative Amendments, the ability to operate with the changes described in this permit application is granted upon submittal of the application.

(2) For Minor Modifications, the ability to operate with the changes described in this permit application is granted after seven (7) days from the submittal of the application, or upon issuance of the NSR permit, whichever is later.

(3) For Significant Modifications, the ability to operate is granted upon issuance of the modified Title V permit.

\* All of the required forms and additional information can be found and downloaded from DAQ's Permitting Section site [www.wvdep.org/daq](http://www.wvdep.org/daq), requested by phone (304) 926-0475, and/or obtained through the mail.